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Doctoral Thesis

Self-Harm and Suicidality Among Lesbian, Gay, Bisexual and Trans Youth: The

Role of School-Based Connectedness

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Word Count

Section	Main Text	References, Tables, Figures, Appendices	Total
Thesis Abstract	282	N/A	282
Literature Review	6642	5908	12550
Research Paper	6442	2959	9406
Critical Appraisal	3279	867	4146
Ethics Section	5920	2687	8607
Total	22570	12421	34991

Thesis Abstract

The focus of this thesis was to explore the role of school-based connectedness in the mental health of LGBT youths. This was achieved in three stages: 1) a systematic literature review to explore the influence of school and teacher connectedness on LGBT youth depression, self-harm, and suicidality, 2) an empirical study to explore the influence of school, teacher, and peer connectedness on self-harm and suicidality of LGBT youths in the UK, and 3) a critical appraisal of the empirical study and the wider literature. The systematic review comprised a narrative data synthesis of 15 relevant studies. Findings of this review indicated that school connectedness is associated with improvements in the mental health of LGBT youths, whilst evidence regarding the influence of teacher connectedness was mixed. The review also highlighted an absence of UK research and a need to explore the influence of separate domains of school-based connectedness. The results of the empirical study indicate that school connectedness is not associated with either self-harm or suicidality of LGBT youths in the UK. Teacher connectedness was associated with a reduced risk of self-harm, suicidal ideation, and suicide plans/attempts, whilst peer connectedness was associated with an increased risk of self-harm and suicidal ideation. This finding has important implications for self-harm and suicide prevention strategies for LGBT youths in the UK, suggesting teacher connectedness and positive peer influence as key areas for intervention. Finally, the critical appraisal contains an extended discussion in relation to the strengths and limitations of both the research paper and the wider literature. Recommendations for future research are made to address current limitations to further contribute toward understanding of the influence of school-based connectedness on the mental health of LGBT youths.

Declaration

This thesis presents research submitted in May 2018 as partial fulfilment of the requirements for the degree of Doctorate in Clinical Psychology at Lancaster University. The work in this thesis is the author's own, except where due reference is made. This research has not been submitted for any other academic award.

Name: Phaedra Robinson

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Date:

Acknowledgements

I would like to thank every young person who gave their time to complete the questionnaire. This project would not have been possible without them. I would also like to thank every individual, organisation, and school that advertised and disseminated the study. Thanks to my supervisors, Liz McDermott and Pete Greasley, for the support and guidance provided throughout the completion of this thesis, and to Guillermo Perez Algorta for his advice and assistance with this study.

I would also like to thank the rest of the 2015 cohort for being such an amazing and supportive group of people to share this journey with. I have learnt something from each of you, and I look forward to the annual EPV's (although we are going to need a new acronym)!

To my friends and family: Thanks for your patience, support, humour, and non-stop entertainment during the stressful times. You have made sure that I don't lose sight of the world outside of the doctorate and that I have maintained a 'work-life balance' throughout! I could not have done it without you.

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Systematic Literature Review

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Abstract

Young people who identify as lesbian, gay, bisexual, and trans (LGBT) experience poorer mental health compared to their non-LGBT peers. School connectedness has been found to protect against poor mental health in young people, however to date no literature review has comprehensively explored the influence of school connectedness on LGBT youth mental health. This systematic review explores the influence of school and teacher connectedness on LGBT youth depression, self-harm, and suicidality. A comprehensive search of relevant databases from 2003 to 2018 was carried out and 3362 papers were located. Following the application of specific inclusion criteria, 15 papers were included in the review. The quality of the included studies was evaluated by two reviewers. Due to the high heterogeneity of the included studies, a narrative data synthesis was conducted. This review highlights inconsistencies in definitions and measures of LGBT status and connectedness. This has implications for the extent to which evidence from different studies can be compared and interpreted. The results demonstrate that school connectedness is associated with improvements in the mental health of LGBT youths, whilst evidence for the influence of teacher connectedness is mixed. Suicide prevention efforts should focus on enhancing feelings of school connectedness for LGBT youths.

Keywords: LGBT; young people; connectedness; school; teacher; suicide

School-Based Connectedness and the Mental Health of LGBT Youths: A Systematic

Literature Review

Youth suicide is a serious global public health issue, with suicide and accidental

death from self-harm reported as the third leading cause of death among 10-19 year

olds globally in 2015 (World Health Organisation, 2017). International research

consistently reports that lesbian, gay, bisexual, and trans (LGBT[1]) youth worldwide are

at an increased risk of poor mental health, self-harm, and suicidality[2] compared to their

non-LGBT peers (D'Augelli, Hershberger, & Pilkington, 2001; Haas et al, 2011; King

et al., 2012; Lucassen et al., 2011; Marshal et al., 2011; McDermott, Hughes, &

Rawlings, 2017; Nodin, Peel, Tyler, & Rivers, 2015; Semlyen, King, Varney, &

Hagger-Johnson, 2016; Wichstrøm & Hegna, 2003). One meta-analysis indicated that

non-heterosexual youths are three times as likely to report suicidal ideation than

heterosexual youths (Marshal et al., 2011), whilst other research reports that LGBT

youths are five times as likely to attempt suicide than their non-LGBT peers (Clark et

al., 2013; Hatzenbuehler, 2011). Over half of LGBT youths report that their self-harm

and suicidal ideation is influenced by their LGBT identity (D'Augelli et al., 2011;

McDermott, Hughes, & Rawlings, 2016), which may be explained by the minority

stress theory (Meyer, 2003). This concept suggests that members of minority groups

experience stressors that are specifically related to their membership to that group, such

as stigma, prejudice, and discrimination. International research demonstrates that

LGBT youths experience high rates of homophobic, biphobic, and transphobic bullying

and discrimination, particularly within the school environment (Bradlow, Bartram,

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[1] The term 'LGBT' is used throughout this paper as an umbrella term for individuals with minority
sexual orientations or minority gender identities.

[2] The term 'Suicidality' refers to risk of suicide, incorporating suicidal ideation, suicide plans, and
suicide attempts.

Guasp, & Jadva, 2017; Clark et al., 2013; D'Augelli et al., 2001; Greytak, Kosciw, &

Diaz, 2009; McDermott et al., 2017; United Nations Educational, Scientific, and

Cultural Organization [UNESCO], 2016).

Research into the impact of school on the mental health of LGBT youths has

greatly increased over the past 15 years, which may be somewhat attributable to

legislative changes that have occurred in the US and the UK. In 2003, the US supreme

court made same-sex sexual activity legal in every state. Also in 2003, Section 28,

which had previously banned UK schools from promoting "the teaching of the

acceptability of homosexuality as a pretended family relationship" (Local Government

Act, 1988, p. 27), was repealed in England and Wales (Scotland had repealed this in

2000). These changes have led to an increase in schools openly discussing LGBT

issues and providing support to LGBT students, indicating a noteworthy shift in both

school climate and societal values and acceptance of LGBT youths. This in turn made

it more possible to research the influence of school on this population.

Negative Impact of School

A recent review indicates that homophobic and transphobic bullying and

discrimination in schools is a universal problem, with LGBT students worldwide

reporting a higher prevalence of violence at school than their non-LGBT peers

(UNESCO, 2016). International research consistently shows that school-based

homophobic, biphobic and transphobic bullying and discrimination increase the

likelihood of self-harm and suicidality in LGBT youths (D'Augelli, Pilkington, &

Hershberger, 2002; McDermott et al., 2017; Plöderl, Faistauer, & Fartacek, 2010;

Rivers & Cowie, 2006; Rosenstreich, 2013). Although reports from the UK and USA

demonstrate that school-based homophobic, biphobic, and transphobic victimisation

experiences are steadily decreasing (Bradlow et al., 2017; Kosciw, Greytak, Giga,

Villenas, & Danischewski, 2015), LGBT youths continue to experience poorer mental health than their non-LGBT peers (Semlyen et al., 2016), highlighting a need for more research in this area.

Although much of the literature pertaining to LGBT mental health focuses on risk factors, it is argued that reducing risk factors will only go part of the way towards reducing suicide, and more focus on increasing protective factors is required (Blum & Ireland, 2004; World Health Organisation, 2014). Gaining a better understanding of protective factors and their mechanisms can help to guide future interventions for reducing suicide risk. In order to increase effectiveness of interventions, it is important to consider not only which protective factors to target and strengthen, but in which setting prevention and intervention efforts should focus.

School Connectedness

Research suggests that the school environment plays a fundamental role in the mental health of young people, specifically those who identify as LGBT (Tharinger & Wells, 2000). Positive school environments are associated with feelings of being connected to school and teachers (García-Moya, Brooks, Morgan, & Moreno, 2015; McLaren, Schurmann, & Jenkins, 2015), and there is a growing body of international research (i.e. from the United States, Canada, Australia, and Africa) that examines the influence of school connectedness on the mental health of adolescents (Joyce & Early, 2014; Langille, Rasic, Kisely, Flowerdew, & Cobbett, 2012; Govender, Naicker, Meyer-Weitz, Fanner, Naidoo, & Penfold, 2013; Shochet, Dadds, Ham, & Montague, 2006). Despite this, there appears to be a lack of research from Europe.

The concept of school connectedness has been described throughout the literature using a broad range of terminology, including belonging, climate, and bonding (Libbey, 2004). Measures and definitions also vary extensively, although a

recent review found that definitions of school connectedness tend to be conceptualised at two different levels or as a combination of both: either referring to feelings towards the whole school, or to specific relationships or interactions at school, for example with teachers or peers (García-Moya, Bunn, Jiménez-Iglesias, Paniagua, & Brooks, 2018). Relationships with teachers is also sometimes referred to independently as teacher connectedness, which is often conceptualised as feeling cared for and respected by teachers, and has been highlighted as one of the most influential aspects of school connectedness (García-Moya et al., 2018). Variations in the conceptualisation and definitions of school connectedness have important implications in terms of the extent to which evidence from different studies can be compared. When conducting research or reviewing evidence in this area, García-Moya et al. (2018) recommend exploring teacher connectedness as a separate component to school connectedness to produce a more coherent body of evidence.

Research has consistently found that higher levels of school connectedness are associated with lower rates of depression, self-harm, and suicidality in young people (Joyce & Early, 2014; Shochet et al., 2006; Whitlock, Wyman, & Moore, 2014). There is also evidence that school connectedness can act as a buffer against the negative impact of adverse events (Flaspohler, Elfstrom, Vanderzee, Sink, & Birchmeier, 2009; Loukas, Roalson, & Herrara, 2010; Ozer, 2005). This may be especially pertinent for LGBT youths, as they often experience a more negative school environment than heterosexual youths due to experiences of homophobic victimisation (Bradlow et al., 2017; UNESCO, 2016). Perhaps unsurprisingly given the higher rates of victimisation at school, LGBT youths report feeling less connected to school and teachers (Ueno, 2005; Eisenberg & Resnick, 2006). Feelings of school connectedness for LGBT youths can be influenced by a number of factors that are known to reduce homophobic,

biphobic, and transphobic victimisation and increase feelings of safety at school, for example school policies against such victimisation, inclusive curriculums, and LGBT groups (Greytak, Kosciw, & Boesen, 2013; Heck, Flentje, & Cochran, 2011; Kosciw, Greytak, Diaz, & Bartkiewicz, 2010; Bradlow et al., 2017). This suggests that feelings of connectedness may be even more pertinent in protecting against depression, self-harm, and suicidality in LGBT adolescents.

The Current Review

The aim of this review is to identify, evaluate and interpret all of the available research that examines the influence of school and teacher connectedness on depression, self-harm, and suicidality in LGBT youths. This will provide a coherent and up-to-date synthesis of studies related to this specific research question and can help to tailor suicide prevention and intervention efforts within schools for this at-risk population.

Method

This review was conducted in accordance with the guidelines and criteria for systematic reviews described by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Moher, Liberati, Tetzlaff, Altman, & Group, 2009). An initial search was completed to identify any previous literature reviews in this subject area. One meta-analysis was found that examined the association between school connectedness and suicidality in adolescents, with a subsample that looked specifically at LGBT youths (Maraccini & Brier, 2017). However, they included only four relevant studies, and additional information was limited. The current review includes these four studies in order to ensure that the results of this wider review incorporates all relevant studies.

A meta-narrative review was conducted as it was considered the most appropriate approach for the review. Studies on school connectedness have used various terminology and conceptualisation (García-Moya et al., 2018; Libbey, 2004), and therefore the heterogeneity makes it difficult to use a more traditional systematic review approach. A meta-narrative review can be used to summarise, synthesise, and interpret diverse body of literature to highlight the various ways in which researchers have studied the same or a similar topic (Greenhalgh et al., 2005). Prior to beginning the systematic search, protocols for bibliographic searches, additional search strategies, inclusion and exclusion criteria, and data extraction were developed. A social sciences librarian was then consulted to ensure that the search strategy was appropriate for this literature review.

Search Strategy

The study aimed to identify and retrieve all empirical studies that examined the association between school or teacher connectedness and depression, self-harm, or suicidality. The databases Academic Search Ultimate, Education Resources Information Center (ERIC), Medline, PsycINFO, and Web of Science were searched on 8th January 2018. Search terms included variations and combinations of school, sexual orientation, connectedness, and mental health (see appendix 1-A) and were based on previous reviews of relevant search terms in LGBT and connectedness research (Lee, Ylioja, & Lackey, 2016; Libbey, 2004). An audit conducted by Greenhalgh & Peacock (2005) reports that systematic reviews of complex evidence should use protocol-driven methods, snowballing methods, and personal knowledge. Therefore, in order to ensure a thorough and systematic review of the literature, many journals specific to youth mental health or LGBT research were searched, and citation tracking, reference

tracking, and personal knowledge were used, however no additional papers were identified through these methods.

Inclusion Criteria

Papers had to meet the following criteria to be eligible for inclusion in this review: (1) Published in English, (2) Published in a peer-reviewed journal, (3) Published since 1st January 2003 (due to aforementioned changes in legislation), (4) A self-report measure of school or teacher connectedness must have been used which includes factors consistently recognised to conceptualise school or teacher connectedness, such as school enjoyment, teacher caring, and positive student-teacher interactions/relationship, (5) A self-report measure of depression, self-harm, or suicidality must have been used, (6) The study must have conducted analysis that compares the association between the measures in (4) and (5) for LGBT youths, (7) The sample must be have been school aged to ensure current experiences of school and teacher connectedness were measured.

Screening Methods

As shown in the PRISMA flowchart (Figure 1), the search retrieved 4188 results of which 826 were duplicates. Of the remaining 3362 studies, most were excluded after reading the title and abstract as they did not meet the inclusion criteria. This resulted in 42 papers that were deemed potentially relevant and the full-text versions of these were read to determine eligibility. Of these, 27 were excluded because they did not meet all the inclusion criteria. The most common reason for exclusion was that they did not look at the association between the connectedness variable and the outcome variables (depression, self-harm, and suicidality). Where it was unclear if studies should be included they were read by the second author. After completing the search and screening process, 15 studies were included in the review.

Insert Figure 1

Quality Assessment and Reporting Style of the Included Papers

The methodological quality of the included studies was assessed by two reviewers using the Effective Public Health Practice Project (EPHPP) quality assessment tool (Thomas, Ciliska, Dobbins, & Micucci, 2004). This tool was judged to be suitable to use in systematic reviews by Deeks et al. (2003). Assessed quality components of the EPHPP include: selection bias, design, confounders, blinding, data collection methods, and withdrawals and drop-outs. According to the EPHPP, all studies in this area would be rated as weak in regard to the design component. This limitation will be discussed as a separate issue, therefore in order to discriminate studies, the EPHPP was amended to omit the design component. The methodological quality of a study was rated as strong when none of the quality criteria were scored as weak. A study was rated as moderate when one quality criteria was scored as weak. When two or more quality criteria were scored as weak, the methodological quality of a study was rated as weak. Any discrepancies in ratings between the two reviewers were resolved through discussion to ensure inter-rater reliability.

The ratings of each study are presented in appendix 1-B. Ten of the 15 studies were rated as 'strong', two 'moderate', and three 'weak'. The most common reason for the low quality of rating was missing or insufficient information regarding the presence and control of confounders. No studies were excluded on the basis of their scores on the EPHPP, however these will be taken into account when discussing the findings. Three studies reported on the association between the variables of interest but did not report significance levels for the association (Birkett, Espelage, & Koenig, 2009;

Denny et al., 2016; Seil et al., 2014). These studies were however considered to add important information to this review and were therefore included in the results.

Data Extraction and Synthesis

Information was extracted from the 15 studies and included the citation, sample size and characteristics, measures used, and results. Due to the methodological heterogeneity of the studies in terms of variables, measures, and statistical analyses, a meta-narrative synthesis (Greenhalgh et al., 2005) was conducted. Findings from the included studies were categorised into the two connectedness domains (school connectedness and teacher connectedness) and were then summarised within the outcome categories (depression, self-harm, suicidal ideation, and suicide attempts). Across studies, factors that were named differently but described the same concept (i.e. school connectedness and school climate) were included in the same category for ease of comparison.

<div align="center">

Results

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Characteristics of the Papers

Table 1 presents the main characteristics of the 15 papers, including the sample size and characteristics, variables measured, and results. The range of measures used across the papers are presented in Table 2. The samples used in the papers of Seil et al. (2009) and Duong and Bradshaw (2014) are both taken from the New York City Youth Risk Behaviour Survey (NYC YRBS, 2009). However, they report a different sample size and conduct different analyses and therefore are considered to contribute different data to the review.

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Insert Table 1

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Included papers were published between 2006 and 2017. They assessed a total of 15,668 participants, with sample sizes ranging from 82 participants (Mclaren et al., 2015) to 4906 participants (Taliaferro & Muehlenkamp, 2017). Studies were predominantly conducted in the USA (n = 12), with one conducted in Australia, one in Canada, and one in New Zealand. The age of the participants ranged from 10 to 19 years old. In the ten studies that reported gender of the LGBT sample, between 11% (Veale, Peter, Travers, & Saewyc., 2017) and 70% (Duong & Bradshaw, 2014) of the samples identified as female, however the participants in the study by Veale et al. (2017) were all transgender, with 43% of participants identifying as non-binary. In regard to ethnicity, although the majority of papers reported a predominantly white sample, this ranged from 4% to 79%, with one sample 51% Hispanic and 33% Black (Duong & Bradshaw, 2014) and another comprising 61% Black youths (Stone, Luo, Lippy, & McIntosh., 2015). Only one study explored differences in ethnicity, comparing results for white youths and racial/ethnic minority youth, and found no differences (Poteat, Mereish, DiGiovanni, & Koenig., 2011).

Two studies used a longitudinal design (Hatchel, Espelage, & Huang., 2017; Russell & Toomey, 2013), whilst the remaining 13 used a cross-sectional design. In order to examine the relationship between the variables of interest, three studies used a simple correlation design, two used an ANOVA, and the remaining ten studies used regression analysis.

Insert Table 2

Assessment Measures and Definitions

Definitions and terminology of school and teacher connectedness differed widely between studies due to the variety of assessment measures used. Similarly, the

measures used to assess depression, self-harm, and suicidality varied between studies. LGBT identity was measured using a variety of questions, and groups of LGBT youths were identified and separated in numerous ways.

In order to measure LGBT status, eleven studies used self-reported identity, two used same-sex or both-sex attraction, and one used same-sex or both-sex sexual contact. One combined results from individuals self-identifying as LGBT and those having same-sex sexual contact (Goodenow, Szalacha, & Westheimer, 2006), although 100 individuals in this sample reported same-sex contact without identifying as LGBT. Eight of the 15 studies included participants that reported they were questioning or unsure of their sexual orientation, whilst three studies excluded such participants. The remaining studies did not include this option in their measure of sexual orientation.

Findings

School connectedness. Ten of the studies in this review examined the association between school connectedness and the dependent variables.

Depression and self-harm. This review found evidence that higher levels of school connectedness are significantly associated with lower levels of depression. Although one study reported no association (Mclaren et al., 2015), four studies found that school connectedness is significantly negatively correlated with depressive symptoms, both at one time-point (Birkett et al., 2009; Denny et al., 2016; Espelage, Aragon, Birkett, & Koenig, 2008) and over a two-year timeframe (Hatchel et al., 2017). One study examined gender differences in the association (Denny et al., 2016) and found that higher levels of school connectedness were associated with fewer depressive symptoms for males but not for females. One study (Espelage et al., 2008) found that school connectedness significantly moderated the impact of homophobic teasing on depressive/suicidal feelings in LGBT youth, although did not report the direct

association between school connectedness and depressive/suicidal feelings. One study examined the association between school connectedness and self-harm (Veale et al., 2017) and found no significant association. These findings suggest that school connectedness is associated with depression, although it may be more protective for males than females, and for those that are experiencing homophobia.

Suicidal ideation and suicide attempts. There was evidence that higher levels of school connectedness were associated with lower levels of suicidal ideation. Three studies examined the direct association between school connectedness and suicidal ideation in LGBT youths (Russell & Toomey, 2013; Stone et al., 2015; Whitaker et al., 2015) and all found that school connectedness was associated with suicidal ideation. Two studies combined suicidal ideation and suicide attempts into a measure of suicidality (Denny et al., 2016; Poteat et al., 2011), and both found that school connectedness was associated with lower suicidality. Two studies examined the influence of school connectedness on suicide attempts as a separate construct and the evidence was mixed. Veale et al. (2017) found a significant association in a sample of trans youth, however Stone et al. (2015) found no association between school connectedness and suicide attempts in a sample of lesbian, gay, and bisexual youths.

One study (Poteat et al., 2011) found a significant correlation between school connectedness and suicidal ideation/attempts for both white youths and racial/ ethnic minority youth, indicating that school connectedness protects against suicidality irrespective of ethnicity. A further study examined gender differences (Denny et al., 2016) and found that a higher level of school connectedness was associated with lower levels of suicidality for males but not for females. This suggests that school connectedness is more protective against suicidality for males than females.

Teacher connectedness. Six of the studies included in this review examined the association between teacher connectedness and the dependent variables.

Depression and self-harm. Teacher connectedness is associated with lower depressive symptoms both in the past week (Mclaren et al., 2015) and in the past year (Seil, Desai, & Smith, 2014). One study examined the association between teacher connectedness and self-harm (Taliaferro & Muehlenkamp, 2017) and found no significant association, indicating that teacher connectedness may be associated with depressive symptoms but not self-harm.

Suicidal ideation and suicide attempts. Four studies examined the influence of teacher connectedness on suicidal ideation. One study found teacher connectedness was associated with lower suicidal ideation (Seil et al., 2014), whilst another found no association (Whitaker, Shapiro, & Shields, 2015). Two studies examined the association for gay/lesbian, bisexual, and questioning youths separately. Coulter, Schneider, Beadnell, & O'Donnell (2017) found that teacher connectedness was significantly associated with reduced suicidal ideation in individuals that identified as bisexual, but not in those that were gay/lesbian or questioning. Conversely, Taliaferro and Muehlenkamp (2017) found that teacher connectedness was associated with reduced suicidal ideation in youths questioning their sexual identity, but not in gay/lesbian or bisexual youths. This indicates that the influence of teacher connectedness on suicidal ideation may differ between sexual orientation identity.

The evidence for an association between teacher connectedness and suicide attempts is mixed. One study (Seil et al., 2014) found that teacher connectedness was associated with a reduced likelihood of having attempted suicide in the past 12 months. Three studies (Coulter, Schneider, Beadnell, & O'Donnell, 2017; Duong & Bradshaw, 2014; Taliaferro & Muehlenkamp, 2017) found no direct association between teacher

connectedness and suicide attempts, whilst one (Goodenow et al. 2006) found that although there was no association with single suicide attempts, it significantly protected against multiple suicide attempts in the past year. Although Duong and Bradshaw (2014) found no direct relationship between teacher connectedness and suicide attempts, they found it significantly protected against suicide attempts in individuals that had experienced both cyber and school bullying.

Discussion

This systematic review is the first to explore the current body of research that examines the association between school and teacher connectedness on mental health outcomes of LGBT youth. A total of 15 papers were identified and reviewed. The findings will be discussed along with a more detailed exploration of methodological limitations, including the variation in measures used. Implications for policy and practice, and recommendations for future research will then be discussed.

School Connectedness

This review found evidence that increased school connectedness is associated with reductions in depression and suicidality in LGBT youths, which is consistent with research in the general youth population (Joyce & Early, 2014; Langille et al., 2012; Govender et al., 2013; Shochet et al., 2006). When considering these findings, it is important to take into account the EPHPP ratings of the included studies. Although the studies varied in their ratings on the EPHPP, five out of ten were rated as 'strong', all of which found that school connectedness was associated with the outcome variables measured, although two of these did not report the significance of the association. Two studies in this review (Hatchel et al., 2017; Russell & Toomey, 2013) used a longitudinal design and provide support for a protective influence of school

connectedness on future depression and suicidal ideation, although more longitudinal studies are required to strengthen the evidence base.

One explanation for this association is that measures and experiences of school connectedness reflect a wide range of factors that are known to reduce in-school victimisation and increase feelings of safety for LGBT youths, such as inclusive curriculums, LGBT groups, and policies against homophobia, biphobia, and transphobia (Greytak et al., 2013; Heck et al., 2011; Kosciw et al., 2010; Bradlow et al., 2017). LGBT students who attend schools with these in place may experience lower levels of depression and suicidality than those who do not, both as a direct result of these factors, and subsequent lower levels of homophobic, biphobic, and transphobic victimisation. This highlights that the relationship between school connectedness and LGBT youth mental health is complex and may be influenced by various factors.

Two studies found no association between school connectedness and depression (Mclaren et al., 2015) or suicide attempts (Stone et al., 2015), both of which achieved a rating of 'moderate' on the EPHPP, indicating that the results may not be as valid or reliable as the results of the studies that gained a 'strong' rating. Furthermore, Mclaren et al. (2015) recruited participants from an LGBT event, indicating that these individuals are confident and comfortable with their LGBT identity, and may feel more connected to peers and the LGBT community than the participants in other samples. These factors may protect LGBT youths against poor mental health above and beyond school influences, therefore reducing the importance of school connectedness in this sample.

Veale et al. (2017) found that in a sample of transgender youths, school connectedness was negatively associated with suicide attempts but not with self-harm. One explanation for this may be that although self-harm and suicidal ideation are often

associated with factors such as low mood (Handley, Rich, Davies, Lewin, & Kelly, 2018; Hankin & Abela, 2011), self-harm serves additional functions for this population. Previous research has found that trans youth often feel imprisoned by their own bodies and much of their self-harm is focussed on the genitals or breast areas, as these body parts represent a gender they do not identify with (Pardoe & Trainor, 2017). School connectedness may be less successful in protecting against these inherent feelings that contribute to self-harm, than against environmental factors such as discrimination and bullying that may lead to low mood and suicidal ideation (Garisch & Wilson, 2015).

Teacher Connectedness

This review provides evidence that higher teacher connectedness is associated with reduced depression, and although there is some evidence that it is associated with suicidal ideation and suicide attempts, findings were mixed. All but one (Mclaren et al., 2015) of the studies that examined teacher connectedness were rated as 'strong' on the EPHPP, therefore it is difficult to attribute these inconsistencies to differences in the quality of the included studies. Only one study examined the association between teacher connectedness and self-harm and found no association (Taliaferro & Muelenkamp, 2017). Although this may be the case, it should be acknowledged that this study compared participants that had self-harmed 10 or more times in the past 12 months with those that had self-harmed less than 10 times, thus questioning the reliability of their measure of self-harm.

Findings suggest that the association between teacher connectedness and suicidal ideation may differ by LGBT subgroup. Teacher connectedness was associated with a greater reduction in suicidal ideation for bisexual (Taliaferro & Muehlenkamp, 2017) and questioning youths (Coulter et al., 2017) than gay/lesbian youths. This may be explained in part by disparities in mental health. Recent studies

have demonstrated that bisexual and questioning youth are at a greater risk of suicidality than gay or lesbian youths (Marshal et al., 2011; Shearer et al., 2016). Teacher connectedness may therefore be more protective for youths that are experiencing particularly elevated levels of suicidal ideation. Although these two studies (Coulter et al., 2017; Taliaferro & Muehlenkamp, 2017) found significant associations between teacher connectedness and suicidal ideation, neither found an association with suicide attempts. This indicates that although teacher connectedness may protect LGBT youths from experiencing suicidality to an extent, other factors may become more pertinent in preventing suicide attempts.

One explanation for the inconsistent findings regarding the influence of teacher connectedness on LGBT mental health may be in part due to the variation in measures used in these studies. Each study measured teacher connectedness using just one question, including feeling connected to a teacher, feeling cared for by a teacher, and being able to talk to a teacher. It is possible that these questions measure different constructs, explaining some of the differences in findings between studies. Additionally, it has been argued that single-item scales are less reliable than multiple-item scales (Frytak & Kane, 2006) and future research should consider using multiple-item scales to measure teacher connectedness to increase the reliability of findings.

The mixed evidence for the association between teacher connectedness and LGBT mental health may also be in part due to the mechanisms by which these are associated. For example, it is possible that the relationship between teacher connectedness and self-harm or suicidality is bidirectional, to some extent masking the positive influence of teacher connectedness. Common functions of self-harm include help-seeking and communicating distress (Edmonson, Brennan, & House, 2016) therefore students that self-harm or are experiencing suicidality may actively seek out

support from teachers. Furthermore, if teachers become aware of these issues, they may approach students to provide support. This could then increase the young person's feelings of connectedness to that teacher, through feeling cared for and more able to talk to them.

Furthermore, it is well known that LGBT youth experience high rates of victimisation (McDermott et al., 2017; Bradlow, 2017; UNESCO, 2016), and that these experiences contribute to poorer mental health outcomes (Haas et al., 2011). Teachers may therefore be more likely to offer and provide support to students that they are aware of as experiencing or at risk of experiencing victimisation, in particular LGBT youths. This could in turn strengthen relationships with young people who are already experiencing difficulties with self-harm and suicidality, even in cases where the teacher is unaware of this.

Consequently, it may be that experiencing poor mental health leads to an increase in teacher connectedness for some students, contributing to non-significant findings in some studies. This is supported by the findings of Goodenow et al. (2006) that although teacher connectedness did not protect against single suicide attempts, it protected against multiple attempts, indicating that the positive influence of teacher connectedness occurred after the first suicide attempt. These findings further highlight the need for longitudinal studies to examine the influence of teacher connectedness on LGBT youth mental health, and the mechanisms through which this is achieved.

Overall, this review found evidence that teacher connectedness may be associated to some extent with LGBT mental health. However, there is stronger evidence for an association between school connectedness and LGBT mental health. This may be due to the variety of factors that contribute to school connectedness such as inclusive curriculums and LGBT groups (García-Moya et al., 2018). Although these

are likely influenced at some point by teachers, many students may attribute these to an overall positive school climate or experience, therefore increasing feelings of connectedness towards the school rather than toward a particular teacher. Many of the studies included in this review also incorporated questions regarding peer or teacher relationships into their measure of school connectedness. Previous research demonstrates that peer connectedness may protect LGBT youths against poor mental health (Taliaferro & Muehlenkamp, 2016; Veale et al., 2017), which may contribute to the overall positive influence of school connectedness found in this review.

Furthermore, the inclusion of teacher relationships in the measures of school connectedness may also contribute to the findings that school connectedness is associated with improvements in LGBT youth mental health. This suggests that although teacher connectedness alone is not always enough to protect against suicidality, it can contribute to an overall protective school environment and feelings of school connectedness when considered alongside other factors, such as peer connectedness or the presence of LGBT groups in schools. This indicates that both school and teacher connectedness may be important factors when considering interventions for self-harm and suicide prevention for LGBT youths.

Measurement of LGBT Status

The included papers varied in their inclusion and conceptualisation of LGBT youths, including self-identified sexual orientation, same-sex attraction, same-sex sexual contact, and a combination. Although measures of sexual orientation pose challenges to researchers (Institute of Medicine of the National Academies, 2011), they often incorporate same-sex attraction, same-sex behaviour, and sexual identity. However there is large variation in the size of LGBT populations depending on the dimension used to determine sexual orientation (Geary et al., 2018). Studies using

same-sex behaviour to measure LGBT status exclude young people that may identify as

LGBT but are not sexually active, or have not had sexual contact with a member of the

same sex. Furthermore, this measure may include participants that have had same-sex

sexual contact but do not identify as LGBT, as there is a lack of concordance between

sexual identity and sexual behaviour in youths (Matthews, Blosnich, Farmer, & Adams,

2014; Mustanski et al., 2014). Indeed, in a second study included in this review

(Goodenow et al., 2006), almost half of the participants reported same-sex sexual

contact but did not identify as LGBT. This is consistent with wider research that has

found that over half of individuals reporting same-sex sexual contact or same-sex

attraction identify as heterosexual (Gates, 2011; Geary et al., 2018). Research indicates

that although LGBT youths experience poorer mental health than non-LGBT youths

(Haas et al., 2011), there are no differences in suicidality between heterosexual youths

that report same-sex behaviour or attraction and those that do not (Zhao, Montoro,

Igartua, & Thombs, 2010). This highlights a need for consistency in the identification

of LGBT individuals in future research, and for consideration of how the measurement

of sexual orientation may influence research findings.

Studies that reported the number of youth questioning their sexual orientation

found that between 15.8% (Hatchel et al., 2017) and 46.6% (Espelage et al., 2008) of

the LGBT sample were questioning. This indicates that the studies that did not include

those questioning their sexual orientation may have excluded a substantial proportion of

individuals that may experience negative mental health due to their sexual orientation.

This is of particular importance when considering that research has found that youths

questioning their sexual orientation are at a higher risk of negative mental health

outcomes than those that identify as gay/lesbian (Shearer et al., 2016). Furthermore,

two papers included in this review analysed subgroups of LGBT youths (Coulter et al.,

2017; Taliaferro & Muehlenkamp, 2017) and found group differences in the association between teacher connectedness and suicidality. This indicates that future research should not only include questioning youths, but also analyse associations within distinct LGBT groups to determine differences between the subgroups.

Further Limitations of the Current Review

When considering limitations of this review, it is necessary to acknowledge the wide variation in definitions of school and teacher connectedness across the papers, and the measures used to conceptualise these. This review attempted to explore teacher connectedness and school connectedness as separate components as recommended by García-Moya et al. (2018). However, many of the measures used to assess school connectedness included an item related to teacher connectedness, highlighting an overlap between these constructs. These measures also vary in the extent to which they assess different aspects such as school enjoyment, safety, and the quality of education they are receiving. This lack of consensus between measures of school and teacher connectedness has implications in the extent to which evidence from different studies can be compared.

The majority of the included studies were cross-sectional in nature, and therefore cause and effect of the relationship between the connectedness factors and the mental health outcomes could not be certain. Only two studies included in this review had a longitudinal design, and although they found that school connectedness was associated with lower levels of future depression (Hatchel et al., 2017) and suicidal ideation (Russell & Toomey, 2013), there is limited evidence to determine the long-term consequences of school connectedness as a protective factor.

Although this review included publications from the past 15 years to reflect significant changes in LGBT legislation, there continue to be societal changes in both

the increased acceptance and rights of LGBT individuals. Therefore, the applicability of studies may also change over time, with the findings of newer studies being more reflective of the current climate. Furthermore, two of the papers included in this review were based on studies conducted prior to 2003 (Goodenow et al., 2006; Russell & Toomey, 2013), further questioning their applicability to the current climate. It is crucial that ongoing research is conducted in this area to ensure an up-to-date evidence base that can be used to reliably inform effective suicide prevention policies.

Suggestions for Future Research

In order to effectively inform suicide prevention intervention, future studies should ensure consistency in how school and teacher connectedness are defined and conceptualised and should consider using multiple-item measures. This would increase the reliability of the measures whilst increasing the comparability of findings between studies. Future research should also use valid and consistent measures of LGBT identity when exploring the combined impact of having an LGBT identity and societal influences on mental health outcomes. This would help ensure that the participants included in studies are the target population and therefore increase validity and reliability of the findings.

There is a dearth of research exploring the influence of school connectedness on youths that identify as trans, although it is consistently reported that this population is at an even greater risk of suicide than other LGBT youths (Haas et al., 2011; McDermott et al., 2017). More studies need to be conducted with trans youths, and future studies should include youths that are questioning their sexual orientation and should consider separating LGBT and gender subgroups when conducting analysis. Future studies exploring school and teacher connectedness would also benefit from a longitudinal design in order to determine causality and to explore the influence of these constructs

over time. This would contribute toward a better understanding of the causal role of school-based connectedness on LGBT youth mental health to inform targeted clinical and wider prevention strategies via social policy.

Future research would benefit from a qualitative design to explore and identify the role of key variables such as school and teacher connectedness. This would increase understanding of the mechanisms through which connectedness can improve mental health, and which specific parts of these variables are most important. This will in turn inform future measurement and operationalisation of these concepts, increasing comparability of results between studies.

Conclusion

This review provides evidence that school connectedness, and to some extent teacher connectedness, protect LGBT youths against depression and suicidality. This indicates that suicide prevention efforts may benefit from a focus on enhancing feelings of school and teacher connectedness in this population. Notwithstanding the aforementioned limitations, this is the first systematic review to synthesise research exploring the influence of school-based connectedness on LGBT youth mental health, making a valuable contribution to the existing literature. Furthermore, this review had highlighted gaps in the literature resulting in recommendations for future research in this area. The results of this review can be used to inform suicide prevention strategies (e.g. teacher training), as well as targeted clinical interventions (e.g. students to have a designated teacher with whom they have regular support meetings) focussed on reducing depression and suicidality in LGBT youths.

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Table 1

Overview of Studies

Authors and year	Location, Study name (years), Sampling Strategy.	Sample description	Variables measured	Results
Birkett, Espelage, and Koenig (2009)	USA. Dane County Youth Assessment (DCYA, 2005). Students from 27 middle schools.	N = 1118; LGB = 776, Questioning = 342; Age = 11 – 14. Approximately 72% white, 12% black, 5% Hispanic.	Positive school climate Depression/ Suicidality	A positive school climate was negatively correlated with depression/suicidality in LGB and questioning youths.
Coulter, Schneider, Beadnell, and O'Donnell (2017)	USA. MetroWest Adolescent Health Survey (2012). Students from 26 high schools across MetroWest.	N = 1832; Age = grades 9 – 12. *Gay/Lesbian:* N = 290; 32.1% female; 72.8% White. *Bisexual:* N = 763; 71.4% female; 67.8% White. *Questioning:* N = 779; 53.1% female, 61.2% White.	Within school support Suicidal thoughts, plans, and attempts	Within-school support was significantly associated with reduced suicidal thoughts in individuals that identified as bisexual (OR = 0.69) but not in gay/lesbian or questioning. No significant associations between within-school support and suicide plans or attempts.
Denny et al. (2016)	New Zealand. Student survey across randomly selected students in randomly selected schools (2007).	N = 343; Age = 13 - 17. *Same sex attraction:* N = 73; 36.8% female; 65% NZ European/Other, 12.6% Asian, 15.4% Maori, 7% Pacific. *Both sex attraction:* N = 270; 55.7% female; 65.4% NZ European/other, 10.2% Asian, 18.7% Maori, 5.7% Pacific.	Supportive school environment Depression Suicidality	Supportive school environment was associated with fewer depressive symptoms and less suicidality in both-sex attracted and same-sex attracted male students but not female students.
Duong and Bradshaw (2014)	USA. New York City Youth Risk Behaviour Survey (YRBS, 2009). Randomly selected classrooms in randomly selected schools.	N = 951; Age = grades 9 – 12; 69.5% female; 9.3% White, 32.9% Black, 50.5% Hispanic/Latino, 6.1% Asian, 1.1% Other.	Teacher connectedness Attempted suicide	Teacher connectedness was not independently significantly associated with attempted suicide but did moderate the association between experiencing both cyber and school bullying and attempting suicide (OR = 0.18).
Espelage, Aragon, Birkett, and Koenig (2008)	USA. DCYA (2005). Students from 18 high schools in a Midwestern county.	N = 1997; LGB = 1065, Questioning = 932; Age = grades 9 – 12. Gender and ethnicity not reported for LGBT sample. Original sample = 50.3% female; 78.6% White.	School climate Depressive and suicidal feelings	School climate was a significant moderator of homophobic teasing and depression/suicidal ideation in LGB and questioning youth. F=7.38, n2 = .02, p<.001

Table 1 continued

Authors and year	Location, Study name (years), Sampling Strategy.	Sample description	Variables measured	Results
Goodenow, Szalacha, and Westheimer (2006)	USA. Massachusetts YRBS (1999). Students included in this study were from 52 schools.	N = 202; Age = grades 9 – 12; 49% Female; 65.9% White, 4.1% Black, 13.2% Hispanic, 10.2% Asian, 6.6% Other/Mixed Ethnicity.	Teacher connectedness Suicide attempts	Participants who believed there was a staff member at school that they could talk to about a problem were less likely as those without such perceived support to report making multiple past-year suicide attempts (OR = 0.34).
Hatchel, Espelage, and Huang (2017)	USA. Longitudinal student survey across 6 Midwestern public high schools at three time points (2014, 2015, 2016).	N = 404; Age = 15 - 19 at wave 1; 18.8% gay/lesbian, 65.4% bisexual, 15.8% questioning; 45.3% female, 51.8% male, 2.9% transgender or other; 2.3% Asian, 26.7% Black, 16.3% Latinx, 22.5% Other, 32.2% White.	School belonging Depression	School belonging was significantly correlated with depression, both cross-sectionally and longitudinally over the 3 time points (r between -.10 and -.37)
Mclaren, Schurmann, and Jenkins (2015)	Australia. Convenience sample recruited from a GLB social event in the state of Victoria, Australia.	N = 82; Age = 14 - 18; 33 gay, 30 lesbian, 19 bisexual; 42 females, 40 males. Ethnicity was not reported.	School connectedness, Teacher connectedness Depression	Teacher connectedness was significantly correlated with depression (r = -.27), however school connectedness was not.
Poteat, Mereish, DiGiovanni, and Koenig (2011)	USA. DCYA (2009). Students from 45 schools in Wisconsin.	N = 926; Age = 10 – 18; 606 White, 320 Racial/Ethnic minority.	School belonging Suicidality (ideation and attempts)	Correlation between school belonging and suicidality was significant for both white youth (-.24) and for racial/ethnic minority youth (-.26).
Russell and Toomey (2013)	USA. Longitudinal. Wave 1 and 2 of the National Longitudinal Study of Adolescent Health (Add Health, 1994-1995, 1996).	N = 917 same-sex or both-sex attracted youth; Age = grade 7 – 12. No information on gender or ethnicity.	Attitudes towards school (close, part of, happy) Suicidal ideation	Higher school connectedness was significantly associated with lower suicidal ideation (OR = 0.49).

Table 1 continued

Authors and year	Location, Study name (years), Sampling Strategy.	Sample description	Variables measured	Results
Seil, Desai, and Smith (2014)	USA. New York City YRBS (2009).	N = 1028; Age = grade 9 – 12; 715 female; 81 White, 246 Black, 533 Hispanic, 59 Asian, and 59 other.	Teacher connectedness Depression	LGB youths without a connection to a teacher/ adult at school were more likely than those with a connection to report depressive symptoms, suicidal ideation, and suicide attempts.
Stone, Luo, Lippy, and LiKamWa McIntosh (2015)	USA. Pooled data from two Milwaukee Youth Risk Behaviour Surveys (2007, 2009).	N = 283 included in suicide ideation results; Age = grade 9 – 12; 59% female; 14% White, 61% Black, 9% Hispanic, 15% Other. N = 234 included in results for suicide attempts.	School connectedness Suicidal ideation, suicide attempts	School connectedness was a significant protective factor for suicide ideation (OR = 0.29) but not for suicide attempts.
Taliaferro and Muehlenkamp (2017)	USA. Minnesota Student Survey (2013).	N = 4906 LGBQ youths; Age = grade 9 and 11). Bisexual: N = 2223; Questioning: N = 2082; Gay/lesbian: N = 655; Total sample: 49.8% female; 73.8% were White, subsample more likely to identify as female and White.	Teacher caring Repetitive self-harm, suicidal ideation, suicide attempts	Teacher caring protected against suicidal ideation for youth questioning their sexual orientation (OR = 0.90) but not for gay/lesbian or bisexual youths. It was not significantly associated with repetitive self-harm or suicide attempts.
Veale, Peter, Travers, and Saewyc (2017)	Canada. The Canadian Trans Youth Health Survey (2014-2015). Convenience sample recruited online and through community organisations.	N = 323. Age = 14 – 18; 47% identified as male, 11% as female, 43% as nonbinary (37% assigned female at birth, 6% assigned male); 72% White, 13% Aboriginal, 2% Black, 8% Asian, 3% Central/South American, 3% Other.	School connectedness Self-harm, suicide attempts	School connectedness was not associated with self-harm, however it was a significant protective factor against suicide attempts in the past year (OR = 0.08).
Whitaker, Shapiro, and Shields (2015)	USA - San Francisco Unified School District's 2011 California Healthy Kids Survey (CHKS)	N = 356; Age = grades 9 and 11; 53.7% Female; 0.3% American Indian/Alaska Native, 33% Asian, 5.6% Black, 38.7% Latino, 2.4% Native Hawaiian/Pacific Islander, 10.4% Multiracial, 4.4% White	School connectedness Caring adult at school Suicidal ideation	School connectedness was a significant protective factor against suicidal ideation (OR = 0.70), however caring adult at school was not.

Table 2

Overview of Measures Used

Authors and year	Measure of LGBT status	Connectedness measure	Outcome variables and measures
Birkett, Espelage, & Koenig (2009)	'Do you ever feel confused over whether you are lesbian, gay, or bisexual?' *Never because I'm straight, Rarely, Sometimes, A lot, Always, Never because I consider myself to be lesbian, gay, or bisexual*	**Positive school climate:** Eight item scale taken from the 2000 DCYA assessing how much students feel they are getting a good education at their school and are respected and cared for by an adult in their school.	**Depression/ suicidality:** 'In the last 30 days how often have you felt like killing yourself?' and 'How often have you been depressed or sad?' *Responses from 1) Never, to 4) All of the time.*
Coulter, Schneider, Beadnell, & O'Donnell (2017)	'Which of the following best describes you?' *Heterosexual or Straight, Gay or Lesbian, Bisexual, Not sure.*	**Within-school support:** Is there at least one teacher or other adult in this school that you can talk to if you have a problem?	**Suicidal thoughts, plans, and attempts in the past 12 months:** Three items from the Centers for Disease Control and Prevention YRBS (2011).
Denny et al. (2016)	Which are you sexually attracted to? *The opposite sex, the same sex, both sexes, not sure, neither.*	**Supportive school environment:** Seven questions about teacher-student relationships, student connection to school, and school belonging.	**Depression:** 10 item measure, the Reynolds Adolescent Depression Scale - Short Form (RAD-SF; Milfont et al., 2008). **Suicidality:** During the last 12 months have you: seriously thought about killing yourself, made a plan about how you would kill yourself, tried to kill yourself. *Not at all, Not in the last 12 months, once or twice, three or more times.*
Duong and Bradshaw (2014)	'Which of the following best describes you?' *Heterosexual or Straight, Gay or Lesbian, Bisexual, Not sure.*	**School connectedness:** 'Do you agree or disagree that you feel connected to at least 1 teacher or other adult in this school you can talk to if you have a problem?' . *1) Strongly agree to 5) Strongly disagree.*	**Attempted suicide:** 'During the past 12 months how many times did you actually attempt suicide?' *0 times, 1 time, 2 or 3 times, 4 or 5 times, 6 or more times.*

Table 2 continued

Authors and year	Measure of LGBT status	Connectedness measure	Outcome variables and measures
Espelage, Aragon, Birkett, and Koenig (2008)	'Do you ever feel confused over whether you are lesbian, gay, or bisexual?' *Never because I'm straight, Rarely, Sometimes, A lot, Always, Never because I consider myself to be lesbian, gay, or bisexual*	**School climate:** 6 items that assessed school enjoyment, quality of education, and teacher caring.	**Depressive and suicidal feelings:** 'During the past 30 days have you felt depressed or very sad?' and 'During the past 30 days have you seriously thought about killing yourself?' *No, Yes but rarely, Yes some of the time, Yes almost all of the time.*
Goodenow, Szalacha, and Westheimer (2006)	'Which of the following best describes you?' *Heterosexual or Straight, Gay or Lesbian, Bisexual, Not sure.* 'With whom have you had sexual contact?' *No one, female(s), male(s), both female(s) and male(s).*	**Teacher to talk to:** 'Is there a teacher or other school adult you can talk to if you have a problem?'. *Yes, No, Not sure.*	**Suicide attempts:** Asked participants if they had made any (one or multiple) suicide attempts in the past 12 months, and whether they had required medical attention.
Hatchel, Espelage, and Huang (2017)	Reported that participants identified as lesbian, gay, bisexual, or questioning.	**School belonging:** Shortened nine-item version of the Psychological sense of school membership (Goodenow, 1993).	**Depression:** Eight-item version of the Orpinas Modified Depression Scale (Orpinas, 1993).
Mclaren, Schurmann, and Jenkins (2015)	Reported that participants identified as lesbian, gay, or bisexual.	**School and teacher connectedness:** Social Questionnaire for Secondary Students (Department of Education, Employment and Training, 2000). Both consist of five items.	**Depression:** 20-item Center for Epidemiologic Studies-Depression Scale (CES-D).
Poteat, Mereish, DiGiovanni, and Koenig (2011)	'Do you identify yourself as any of the following? (Check all that apply)'. *Gay, lesbian, bisexual, transgender, questioning my sexual orientation, or none of the above.*	**School belonging:** Measured using the four-item Psychological Sense of School Membership scale (Bosworth, Espelage, & Simon, 1999)	**Suicidality:** 'During the past 30 days have you seriously thought about killing yourself?' *No, Yes but rarely, Yes some of the time, Yes almost all of the time.* 'In the past 12 months, have you attempted to kill yourself?' *No, Yes one time, Yes more than once.*

Table 2 continued

Authors and year	Measure of LGBT status	Connectedness measure	Outcome variables and measures
Russell and Toomey (2013)	Wave 1: 'Have you ever had a romantic attraction to a male?' and 'Have you ever had a romantic attraction to a female?' *Yes, No.*	**Attitudes toward school:** Wave 1: 'You feel close to people at school', 'You feel part of school', 'You are happy to be at your school'. *From 1) Strongly disagree to 5) Strongly agree.* **Teacher caring:** Wave 1: 'How much do you feel that your teachers care about you?' *0) Not at all to 5) Very much.*	**Suicidal thoughts:** Wave 2: 'During the past 12 months, did you ever seriously think about committing suicide?' *Yes, No*
Seil, Desai, and Smith (2014)	'Which of the following best describes you?' *Heterosexual, gay/lesbian, bisexual, not sure.*	**Teacher Connectedness:** 'Do you agree or disagree that you feel connected to at least one teacher or adult in this school that you can talk to if you have a problem?' *Strongly agree, Agree, Not sure, Disagree, Strongly disagree.*	**Depressive symptomatology:** 'Have you felt so sad and hopeless almost every day for 2 weeks or more in a row that one stopped doing some usual activities in the past 12 months?' **Suicidal Ideation:** 'Have you seriously considered a suicide attempt in the past 12 months?' **Suicide attempt:** 'Have you attempted suicide at least once in the past 12 months?'
Stone, Luo, Lippy, and LiKamWa McIntosh (2015)	'What is your sex?' and 'During your life, with whom have you had sexual contact?' *Females, Males, Females and males, I have never had sexual contact.*	**School connectedness:** 'Do you agree or disagree that you feel like you belong at this school?' *Range from 1) Strongly agree to 5) Strongly disagree.*	**Suicidal ideation:** 'During the past 12 months, did you seriously consider attempting suicide?' **Suicide attempts:** 'During the past 12 months, how many times did you actually attempt suicide?'
Taliaferro and Muehlenkamp (2017)	'Which of the following best describes you?' *Heterosexual or Straight, Gay or Lesbian, Bisexual, Not sure.*	**Teacher caring:** 'How much do you believe teachers/other adults at school care about you?'	**Repetitive self-harm:** 'During the past 12 months, how many times did you do something to purposefully hurt or injure yourself without wanting to die?'. **Suicidal ideation:** 'Have you ever thought about killing yourself?' **Suicide attempts:** 'Have you ever tried to kill yourself?'. *No, Yes more than a year ago, Yes during the past year.*

Table 2 continued

Authors and year	Measure of LGBT status	Connectedness measure	Outcome variables and measures
Veale, Peter, Travers, and Saewyc (2017)	Participants identified as trans, genderqueer, or felt their gender did not match their body.	**School connectedness:** Five-item School Connectedness Scale (Bonny, Britto, Klosterman, Hornung, & Slap (2000).	**Self-harm:** 'Have you hurt or injured themselves on purpose without wanting to die?' **Suicide attempts:** 'During the past 12 months, how many times did you actually attempt suicide?'
Whitaker, Shapiro, and Shields (2015)	'Which of the following best describes you?' *Heterosexual or Straight, Gay or Lesbian, Bisexual, Not sure.*	**School connectedness:** Five questions adapted from the National Longitudinal Study of Adolescent Heath's school connectedness scale. **Caring adult at school:** 'At my school there is a teacher or other adult who really cares about me'. *Very much true, Pretty much true, A little true, Not at all true.*	**Suicidal ideation:** 'Have you ever seriously considered suicide in the past 12 months?' *Yes, No.*
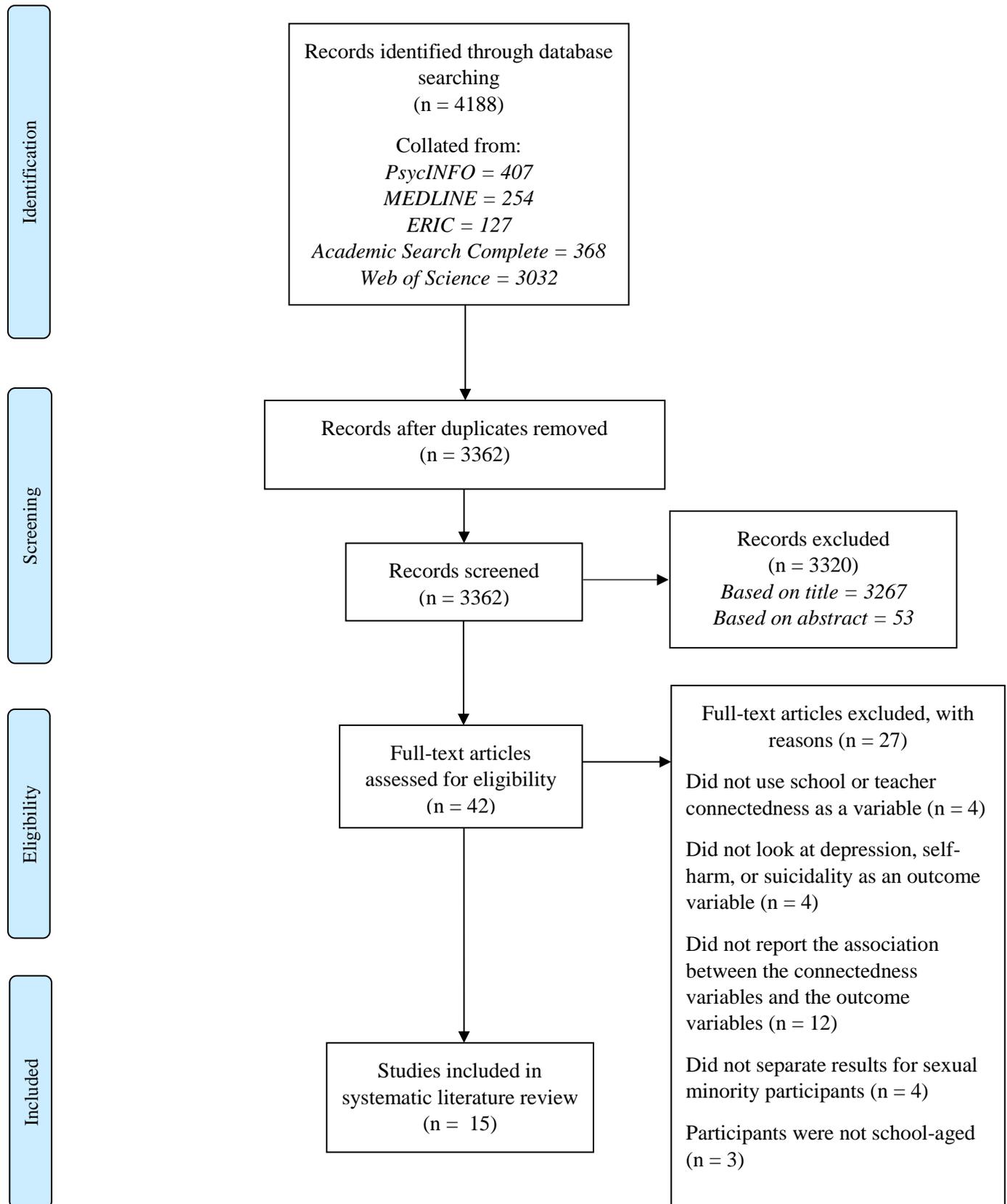
Figure 1. PRISMA Diagram

Appendix 1-A

Search Terms Used in Databases

Search #	Concept	Search Terms Used
#1	School	[TI, AB] School* OR teacher*
#2	Connectedness	[TX] connect* OR attach* OR bond* OR engagement OR affiliation OR membership OR community OR experienc* OR safe* OR environment* OR "school climate" OR relations* OR belong*
#3	LGBT	[TI, AB] gay* OR lesbian* OR homosexual* OR "same sex" OR bisexual* OR bicurious OR queer OR intersex OR asexual OR questioning OR pansexual* OR LGB* OR GLB* OR sexualit* OR "sexual identit*" OR "sexual minorit*" OR "sexual orientation" OR "sexual preference" OR "gender identity" OR "gender minorit*" OR "gender queer" OR "gender fluid" OR genderqueer OR "gender dysphori*" OR transgender* OR transsexual*
#4	Mental Health	[TI, AB] mental health" OR "wellbeing" OR "psychological" OR depress* OR mood OR "self harm" OR "self injur*" OR suicid* OR NSSI
#5	Final Search	#1 AND #2 AND #3 AND #4

Appendix 1-B

Quality Assessment Ratings from EPHPP

Author and Date	Selection Bias	Confounders	Blinding	Data Collection	Withdrawal & drop-out	Overall
Birkett, Espelage, and Koenig (2009)	Moderate	Strong	Strong	Strong	N/A	Strong
Coulter, Schneider, Beadnell, and O'Donnell (2017)	Strong	Strong	Strong	Strong	N/A	Strong
Denny et al. (2016)	Moderate	Strong	Strong	Strong	N/A	Strong
Duong and Bradshaw (2014)	Moderate	Strong	Strong	Strong	N/A	Strong
Espelage, Aragon, Birkett, and Koenig (2008)	Strong	Weak	Strong	Weak	N/A	Weak
Goodenow, Szalacha, and Westheimer (2006)	Moderate	Strong	Strong	Strong	N/A	Strong
Hatchel, Espelage, and Huang (2017)	Moderate	Weak	Strong	Strong	Weak	Weak
Mclaren, Schurmann, and Jenkins (2015)	Moderate	Weak	Moderate	Strong	N/A	Moderate
Poteat, Mereish, DiGiovanni, and Koenig (2011)	Moderate	Moderate	Strong	Strong	N/A	Strong
Russell and Toomey (2013)	Moderate	Weak	Strong	Strong	Weak	Weak
Seil, Desai, and Smith (2014)	Moderate	Strong	Strong	Strong	N/A	Strong
Stone, Luo, Lippy, and LiKamWa McIntosh (2015)	Moderate	Strong	Strong	Weak	N/A	Moderate
Taliaferro and Muehlenkamp (2017)	Moderate	Strong	Strong	Strong	N/A	Strong
Veale, Peter, Travers, and Saewyc (2017)	Moderate	Moderate	Strong	Strong	N/A	Strong
Whitaker, Shapiro, and Shields (2015)	Moderate	Moderate	Strong	Strong	N/A	Strong

Appendix 1-C

Author Guidelines for the Journal of Homosexuality

Author Guidelines

Prospective authors are to send the following items as e-mail attachments: (1) a cover letter indicating that the manuscript is not under consideration for publication elsewhere; (2) a blinded (i.e., with no references or indications as to the author's name) electronic copy of the manuscript; (3) an unblinded copy (complete with author's name, academic degree, professional affiliation, contact information, and any desired acknowledgment of research support or other credit) of the manuscript; and (4) a free-standing abstract of no more than 150 words excluding the title of the manuscript, which is to appear at the top of the page, and 5-7 key words. Also, manuscripts are to be submitted in English using Microsoft Word (in 12-point font, *Times New Roman*, double-spaced (with headers bearing the title or partial title of the manuscript), paginated, and with one-inch margins (top/bottom, left/right)). Manuscripts must not exceed 10,000 words (inclusive of references). Authors are to follow the publication guidelines of the *Publication Manual of the American Psychological Association,* 6th edition (2009). Authors are responsible for obtaining permission to reproduce copyrighted material from other sources and are required to sign an agreement for the transfer of copyright to the publisher. As an author, you are required to secure permission if you want to reproduce any figure, table, or extract from the text of another source. This applies to direct reproduction as well as "derivative reproduction" (where you have created a new figure or table which derives substantially from a copyrighted source.) All accepted manuscripts, artwork, and photographs become the property of the publisher.

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Section Two: Research Paper

Self-Harm and Suicidality Among Lesbian, Gay, Bisexual and Trans Youth: The

Role of School-Based Connectedness

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Abstract

Objective: Young people who identify as lesbian, gay, bisexual, and trans (LGBT) are at an increased risk of self-harm and suicidality compared to their non-LGBT peers. This study aimed to explore the influence of school, teacher, and peer connectedness on self-harm, suicidal ideation, and suicide plans/attempts of LGBT youths. **Method:** A total of 219 LGBT youths (aged 13-16 years) living in the UK completed an online survey about their experiences of connectedness and mental health. Binary multiple logistic regression analyses were conducted to explore associations between school, teacher, and peer connectedness and experiences of self-harm, suicidal ideation, and suicide plans/attempts. **Results:** Teacher connectedness was associated with a reduced risk of self-harm, suicidal ideation, and suicide plans/attempts, whilst peer connectedness was associated with an increased risk of self-harm and suicidal ideation. School connectedness was not associated with either self-harm or suicidality. **Conclusions:** Interventions for self-harm and suicide prevention for LGBT youths should focus on strengthening teacher connectedness and enhancing the positive influence of peers. This could be facilitated through school strategies aimed at increasing knowledge and acceptance, such as providing an inclusive curriculum, LGBT groups, and Stonewall champions.

Keywords: connectedness; young people; LGBT; school; suicide

Self-Harm and Suicidality Among Lesbian, Gay, Bisexual and Trans Youth: The Role

of School-Based Connectedness

Youth suicide is a serious public health issue, with suicide the leading cause of

death among 10-19 year olds in the UK (Office for National Statistics, 2016),

highlighting an urgent need to improve suicide prevention strategies. International

research consistently demonstrates that lesbian, gay, bisexual, and trans (LGBT[1]) youth

are at a greater risk of self-harm and suicidality[2] than their non-LBGT peers (Haas et al,

2011; Marshal et al., 2011; Nodin, Peel, Tyler, & Rivers, 2015; Semlyen, King,

Varney, & Hagger-Johnson, 2016; Wichstrøm & Hegna, 2003), with trans youth at a

particularly high risk compared to other sexual minority youth (McDermott, Hughes, &

Rawlings, 2017).   LGBT youths are five times as likely to attempt suicide than non-

LGBT youths (Clark et al., 2013; Hatzenbuehler, 2011) and research from the UK

indicates that over half of LGBT youths self-harm or have done previously (Bradlow,

Bartram, Guasp, & Jadva, 2017; McDermott et al., 2017; Metro Youth Chances, 2014;

Nodin et al., 2015). Self-harm is one of the strongest predictors of suicide highlighting

a need to address this issue in future suicide prevention efforts (Ougrin, Tranah, Leigh,

Taylor, & Asarnow, 2012).

Over half of LGBT youths report that their self-harm and suicidal ideation is

related to their LGBT status (McDermott, Hughes, & Rawlings, 2016; D'Augelli,

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[1] The term 'LGBT' is used throughout this paper as an umbrella term for individuals with minority sexual orientations or minority gender identities, which includes those beyond gay, lesbian, bisexual, and trans. In accordance with the definitions used by Stonewall (2017), *'gay'* and *'lesbian'* refer to an individual who has an emotional, romantic, and/or sexual orientation towards individuals of the same gender, *'bisexual'* is used to describe an emotional, romantic, and/or sexual orientation towards more than one gender, and *'trans'* is an umbrella term to describe individuals whose gender is not the same as, or does not fit comfortably with the sex they were assigned at birth. This includes (and is not limited to) individuals that describe themselves as transgender, gender queer, gender fluid, and non-binary.

[2] Suicidality refers to risk of suicide, incorporating suicidal ideation, suicide plans, and suicide attempts.

Hershberger, & Pilkinton, 2001), indicating that factors pertaining to their LGBT

identity contribute to their risk of self-harm and suicidality. International research has

demonstrated that LGBT youths experience high rates of homophobic, biphobic, and

transphobic victimisation, particularly within the school environment (Clark et al.,

2013; D'Augelli et al., 2001; Fineran, 2001; Greytak, Kosciw, & Diaz, 2009;

McDermott et al., 2017; Bradlow et al., 2017; United Nations Educational, Scientific,

and Cultural Organization [UNESCO], 2016). These victimisation experiences are a

key factor in LGBT self-harm and suicidality (Haas et al., 2011), and this association is

reported to be influenced by depression and self-esteem (Diamond et al., 2011).

Suicide Interventions

In a drive to reduce youth suicide in the UK, the government have recognised

these disparities in LGBT suicide risk and have developed a programme for schools to

reduce homophobia, biphobia, and transphobia across England, which includes staff

training and 'whole-school' approaches (UK Parliament, 2017). They acknowledge

that although this will provide a good base from which to improve the mental health of

LGBT youths, there is more that could be done, indicating that identification and

inclusion of other important factors may further improve the effectiveness of such

interventions.

Recent research demonstrates that school-based homophobic, biphobic, and

transphobic victimisation experiences of LGBT youth in the UK are steadily decreasing

(Bradlow et al., 2017), however LGBT youths continue to experience poorer mental

health than their non-LGBT peers. This indicates that factors beyond victimisation may

contribute to LGBT self-harm and suicidality. Much of the existing literature

pertaining to LGBT mental health focuses on risk factors such as victimisation

experiences (Russell, 2008), however it is argued that reducing risk factors will only go

part of the way towards reducing suicide, and more focus on increasing protective factors is required (Blum & Ireland, 2004; World Health Organisation, 2014). This indicates that reducing homophobic, biphobic, and transphobic victimisation in school will only go some of the way towards reducing suicidality in LGBT youths, whereas gaining a better understanding of protective factors in school may increase the effectiveness of suicide prevention strategies.

School Influence

The school environment has a considerable influence on the mental health of young people (UK Parliament, 2016), in particular those that identify as LGBT (Tharinger & Wells, 2000). Although this is undoubtedly somewhat attributable to LGBT youths commonly experiencing homophobia, biphobia, and transphobia in school, there is a growing body of international research that explores the roles of school, teacher, and peer connectedness in youth mental health (Joyce & Early, 2014; Marraccini & Brier, 2017; Thapa, Cohen, Guffey, Higgins-D'Alessandro, 2013; Whitlock, Wyman, & Moore, 2014).

School connectedness has been referred to in the literature using a broad range of terminology, including belonging, climate, and bonding (Libbey, 2007). Measures and definitions also vary extensively, although a recent review found that school connectedness is usually conceptualised at two different levels or as a combination of both: either referring to feelings towards the whole school as an institution, or to specific relationships or interactions with others at school, for example with teachers or peers (García-Moya, Bunn, Jiménez-Iglesias, Paniagua, & Brooks, 2018). Positive relationships with teachers and peers are also sometimes described independently as teacher and peer connectedness (Centres for Disease Control and Prevention, 2009) and are often conceptualised by feeling cared for, respected by, and getting on well with

such individuals. A recent review recommended that future research in this area should examine the roles of school, teacher, and peer connectedness separately to explore independent influences and contribute a more coherent body of evidence in this area (García-Moya, Bunn, Jiménez-Iglesias, Paniagua, & Brooks, 2018).

The systematic review in the previous section of this thesis indicates that school connectedness is associated with a lower risk of suicidality in LGBT youths, whilst the evidence for the influence of teacher connectedness on suicidality was mixed. However, many of the measures of school connectedness included elements of teacher connectedness, which indicates evidence for a positive influence of teacher connectedness on suicidality. Only one study examined the influence of school connectedness on self-harm (Veale, Peter, Travers, & Saewyc, 2017), whilst one examined teacher connectedness (Taliaferro & Muehlenkamp, 2017), with results from both indicating no association with self-harm. Few studies have explored the influence of peer connectedness on LGBT mental health, although there is preliminary evidence that peer connectedness is associated with reduced suicidal ideation and suicide attempts in LGBT youths (Taliaferro & Muehlenkamp, 2016; Veale et al., 2017). Although research indicates that the relationship between school connectedness and suicidality may be influenced by depression and self-esteem (Langille, Asbridge, Cragg, & Rasic, 2015; Smith, Poon, Stewart, Hoogeveen, Saewyc, & the McCreary Centre Society, 2011), most studies that examine this association do not include measures of depression and self-esteem.

The Current Study

Although there is evidence to suggest that school, teacher, and peer connectedness may reduce the risk of self-harm and suicidality in LGBT youths, the majority of existing studies have been conducted in the US, with none conducted in the

UK to date. The education systems vary across countries, as do laws and attitudes towards LGBT people, and it is therefore difficult to generalise the existing findings to the UK. UK-based research into protective factors in the school environment is required to enable UK schools to better support LGBT students and reduce self-harm and suicidality in this vulnerable group.

This study aims to fill this gap in the evidence base by examining the influence of school, teacher, and peer connectedness on self-harm and suicidality in LGBT youths in the UK. By doing so it is hoped that the results can help to inform mental health policy (UK Parliament, 2017) and practice, in addition to contributing to the development of effective suicide prevention strategies and interventions. Based on the existing literature, it is hypothesised that school, teacher, and peer connectedness will be significantly associated with lower suicidal ideation and suicide plans/attempts.

Method

Design

Data was collected through an online survey, which included measures of demographic variables (age, ethnicity, sexual orientation, and gender identity), the independent variables (school, teacher, and peer connectedness) and the dependent variables (self-harm, suicidal ideation, and suicide plans/attempts). Depression and self-esteem were also measured, as previous research reports that they are associated with both school connectedness and suicidality (Langille et al., 2015; Smith et al., 2011).

Online methods are increasingly used to research sensitive subjects such as self-harm and suicidality, as they provide a sense of anonymity and confidentiality that face-to-face methods do not. This may be of particular importance when researching sensitive topics with marginalised and hidden groups, such as young people that

identify as LGBT (Liamputtong, 2007). Online methods have been successfully used

to reach LGBT youths who may not otherwise take part in research (Hillier & Harrison,

2007; McDermott et al., 2017; McDermott & Roen, 2012). An online survey was used

in the current study to provide anonymity to young people and enable more individuals

to have both access and opportunity to be included in the study.

Measures

    Demographic variables.   A demographics section was included to obtain

information about the participants' age, gender identity, sexual orientation, ethnicity

and the country in which they attend school (England, Northern Ireland, Scotland or

Wales). Gender identity was measured by asking two questions adapted from the

Equality and Human Rights Commission (2012). First, participants were asked 'How

would you describe your birth assigned gender?', with options of 1) Male, 2) Female, 3)

Intersex, 4) Prefer not to say. They were then asked 'Which of the following describes

how you think of yourself?' 1) Male, 2) Female, 3) Intersex, 4) Gender fluid, 5) Non-

binary, 6) Unsure, 7) Prefer not to say, 8) Other. Participants that identified as the same

gender as their birth assigned gender were referred to as *cisgender*, whilst the

remaining participants were referred to as *trans*.

    Sexual orientation was measured by expanding the options used in the UK

Office for National Statistics (ONS; Haseldon & Joloza, 2009) measure, as

recommended by McDermott (2010). Participants were asked 'Which of the following

options best describes how you think of yourself' and asked to select one of the

following options: 1) Straight/Heterosexual, 2) Gay or Lesbian, 3) Bisexual, 4)

Questioning, 5) Queer[3], 6) Pansexual[4], 7) Unsure, 8) Prefer not to say, 9) Other. For the purpose of analysis, the final categories used for this measure were gay/lesbian, bisexual, pansexual, questioning (merged with unsure), and other (which included the remaining responses). These measures of sexual orientation and gender identity have been used in previous research with LGBT youths (McDermott et al., 2017).

Connectedness variables. School, teacher, and peer connectedness were measured using the corresponding three subscales of the Social Questionnaire for Secondary Students (Department of Education, Employment and Training, 2000). The connectedness to school subscale (e.g., I look forward to going to school) and the connectedness to peers subscale (e.g., I am accepted by others at my school) each consist of 4 items and the connectedness to teachers subscale (e.g., My teachers understand my point of view) consists of 5 items. Responses are scored on a 5-point scale, where 1 = strongly agree and 5 = strongly disagree. Good levels of internal consistency were found for the three scales (school: .90, teacher: .83, peer: .81).

Dependent variables. Self-harm was assessed by asking participants 'Have you ever tried to harm yourself in some way?' and asking them to select either 'yes' or 'no'. If 'yes' was selected, participants were then asked, 'How many times have you tried to harm yourself in the last 6 months?' and provided with five options: 1) Have not harmed in the last six months, 2) Once, 3) 2-10 times, 4) 11-20 times, and 5) More than 20 times. The responses were then dichotomised to distinguish those that had self-harmed at least once in the past 6 months and those that had not. Suicidality was measured using the 4-item Suicide Behaviors Questionnaire-Revised (SBQ-R; Osman

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[3] Stonewall (2017) define *'queer'* as a term that has been "reclaimed by LGBT young people in particular who don't identify with traditional categories" of sexual orientation.
[4] Stonewall (2017) define *'pansexual'* as a term used to refer to an individual whose emotional, romantic, and/or sexual attraction towards others is not limited by sex or gender.

et al., 2001), which was adapted for the purpose of analysis to provide two dichotomous variables: Suicidal ideation and suicide plans/attempts. Suicidal ideation included those that reported having thought about killing themselves in the past 12 months 'sometimes', 'often', or 'very often', whilst lifetime suicide plans/attempts were measured.

Depression and self-esteem. Self-esteem was measured using the 10-item Rosenberg Self-Esteem Scale (SES; Rosenberg, 1965), whilst depression was measured by the Center for Epidemiologic Studies-Depression Scale (CES-D; Radloff, 1991). These measures have been widely used in the general population and have been found to be reliable and valid when used with adolescents (Bagley & Mallick, 2001; Mclaren, Schurmann, & Jenkins, 2015; Roberts, Lewinsohn, & Seeley, 1991).

Impact of being LGBT on answers. After the individual measures for connectedness, self-esteem, depression, and self-harm/suicidality, participants were asked 'When thinking about the questions asked on this page, what impact do you think being LGBT has had on these experiences?'. Responses were scored on a 5-point scale, where 1 = very negative, 2 = somewhat negative, 3 = no impact, 4 = somewhat positive and 5 = very positive.

Additional information. At the end of the survey, participants were invited to provide any additional information related to their experiences, or any feedback on completing the survey.

Ethics

This project was approved by Lancaster University's Faculty of Health and Medicine Research Ethics Committee. Participants were required to read a detailed information sheet (see appendix 4-B) and provide their informed consent prior to

beginning the survey (see appendix 4-C). Following completion of the survey,

participants were provided with full debriefing information (see appendix 4-D).

Although participants were aged between 13 and 16 years, parental consent to

take part in this study was not necessary. Requiring parental consent for LGBT youths

to take part in research would likely alter study results by excluding participants that

do not want their parents to know about their LGBT status or mental health

experiences, and those that may be at risk if they did (Flores, Mckinney, Arscott, &

Barroso, 2018; Mustanski, 2011). This is especially important when considering that

this is a minority group often overlooked in research, which is necessary for

development of appropriate social policy and interventions. This area of research has

been conducted with young people a number of times without parental consent, with no

known negative implications (Bradlow et al., 2017; McDermott et al., 2017; Metro

Youth Chances, 2014).

Procedure

The survey was advertised through social media sites (Facebook and Twitter) by

providing brief information about the study and inclusion criteria, along with a link to

further information about the study (see appendix 4-E). This was then shared by many

large LGBT organisations which enabled more LGBT young people to be reached.

Emails were also sent to all schools in the UK that are attended by students between the

ages of 13 and 16. These emails provided information on the study along with an A4

poster detailing how to access the study (see appendix 4-F) and school staff were asked

to share the information with their students. Some schools responded to confirm that

they had done so, whilst some declined, although it is not possible to know how many

schools in total shared the information.

Participants

The final sample comprised 219 youths between the ages of 13 and 16 years (*M* = 14.7; *SD* = 1.18) who identified as LGBT and attended school in England (88%), Northern Ireland (3%), Scotland (8%), and Wales (1%). With respect to ethnicity, the majority of respondents identified themselves as White (93%), whilst the remaining participants identified as Mixed/Multiple ethnic background (4%), Asian (1 %), and Other (2%). Participants were bisexual (32%), gay/lesbian (24%), pansexual (19%), questioning (7%), and other (18%). Regarding gender identity, 43% of the sample were transgender whilst the remaining 57% identified as cisgender. Only six participants identified as both trans and heterosexual, whilst the remaining participants identified as having a minority sexual orientation.

Data Analysis

Data was extrapolated from Qualtrics' survey software and entered into SPSS (v. 23.0) to be stored and analysed. Prior to analysis, 140 participants who had started the questionnaire but had not completed it were removed, and five participants that had finished the questionnaire were excluded due to a large number of missing responses. Data from two participants were removed due to inappropriate responses that included racist and transphobic language. One participant was excluded because they were 17 years old and 15 were excluded because they identified as heterosexual and cisgender and therefore did not meet the inclusion criteria for this study. There was a small amount of missing data in the final sample, however analysis indicated that data was missing at random. One participant was missing two responses on the CESD, whilst 21 were missing one response on this scale. Between one and five participants were missing one response on the remaining measures. Sensitivity analyses indicated no significant differences when including and excluding participants with missing data

from the analysis and therefore total scores on the measures were calculated using the available scores.

Kolmogorov-Smirnoff analysis found that scores on the connectedness variables and the SES were not normally distributed, and therefore non-parametric analyses were conducted. Chi-square and Kruskal-Wallis analyses were conducted to examine differences between age, sexual orientation, and gender identity groups on the study outcomes and primary independent variables. To examine significant differences between sexual orientation subgroups in the chi-square analysis, adjusted residuals were converted to P-values and Bonferroni adjusted alpha levels of .005 were used. Spearman correlation analyses were conducted and converted in order to conduct a partial correlation analysis between the connectedness variables, depression, and self-esteem, controlling for age, sexual orientation, and gender identity.

Binary multiple logistic regression analyses were conducted to examine the associations between connectedness and self-harm, suicidal ideation, and suicide plans/attempts. Independent variables included in the models were school connectedness, peer connectedness, and teacher connectedness, controlling for depression and gender identity. Minimum sample size requirements for logistic regression analyses are commonly calculated based on the work by Peduzzi, Concato, Kemper, Holford, & Feinstein (1996), which claims that previous recommendations of a minimum of ten events per independent variable (Long, 1997) should take into account the proportion of successes. For example, if p is the smallest number of proportions of positive or negative cases in the population (in the current study .42 for no suicidal ideation) and k is the number of covariates (in this case 5), the minimum number of participants is $N = 10k / p$. The minimum required sample size for this study is therefore 119, indicating the sample size of 219 is adequate.

Results

Descriptive information about participant age, sexual orientation, and gender identity are presented in Table 1. In total, 53% of participants had self-harmed in the past six months (73% said they had self-harmed when not restricted to the last six months), 58% reported experiencing suicidal ideation sometimes, often, or very often in the past 12 months, and 52% reported having previously planned or attempted suicide. Kruskal-Wallis analyses indicated that trans participants had significantly higher rates of depression ($H(1) = 11.71$, p = .001), lower self -esteem ($H(1) = 10.49$, p = .001), and lower peer connectedness ($H(1) = 11.08$, p = .001) than cisgender participants. There were no significant differences between trans and cisgender participants on measures of school and teacher connectedness. Chi-square tests indicated that trans participants were significantly more likely than cisgender participants to report self-harm ($\chi^2(1, 219) = 17.03$, p < .001), suicidal ideation ($\chi^2(1, 219) = 10.822$, p < 001) and plans/attempts ($\chi^2(1, 219) = 7.42$, p = .006). Although there were significant differences overall between sexual orientation and suicidal ideation ($\chi^2(4, 219) = 19.21$, p = .001), there were no significant differences between subgroups after Bonferroni adjustments were made. There were no significant differences between sexual orientation subgroup or age on any of the remaining measures. Sexual orientation and age were not therefore included in the final logistic regression models, whilst gender identity was in order to control for differences between trans and cisgender participants in the outcome variables.

Insert Table 1

Correlations

Correlations are presented in Table 2 along with means, standard deviations, and ranges. There were significant positive correlations between the three connectedness variables, and higher scores on each of the connectedness measures were correlated with higher self-esteem and lower depression scores. Recorded scores reflected the full range of available scores for each measure. Higher self-esteem was associated with lower depression, with a high correlation between the variables ($r = -.74$), indicating that multicollinearity was an issue. Sensitivity analysis was conducted by comparing models with either self-esteem or depression removed. Depression explained more variance in the models therefore self-esteem was not included in the final regression models.

Insert Table 2

Regression Analyses

The final binary logistic models for self-harm, suicidal ideation and suicide plans/attempts are presented in Table 3.

Insert Table 3

Self-harm. The final logistic regression model for self-harm was statistically significant, indicating that the combination of independent variables reliably distinguished between individuals that had self-harmed in the past 6 months and those that had not ($\chi^2(5) = 91.56$, $p < .001$). The model explained 45.6% of the variance (Nagelkerke R^2) and prediction success overall was 77.2%. School connectedness was not significantly associated with self-harm, however higher teacher connectedness was associated with lower odds of self-harm ($OR = 0.87$; $CI = 0.77$-0.97). Peer connectedness was significantly associated with increased odds of self-harm ($OR =$

1.18, CI = 1.04-1.35). Gender identity was significantly associated with self-harm,

with trans participants over three times as likely than cisgender participants to have

self-harmed in the past six months (OR = 3.01, CI = 1.50-6.03).

Suicidal ideation. The model for suicidal ideation was statistically significant,

($\chi^2(5)$ = 95.21, p < .001). The model explained 47.4% of the variance (Nagelkerke R^2)

and correctly classified 76.7% of cases. Peer connectedness was associated with

increased odds of suicidal ideation (OR = 1.24, CI = 1.08-1.43), whilst teacher

connectedness was associated with lower odds of suicidal ideation (OR = 0.86, CI =

0.76-0.96). Gender identity was also associated with suicidal ideation, with trans

participants over twice as likely to report suicidal ideation than cisgender participants

(OR = 2.19, CI = 1.07-4.44).

Suicide plans/attempts. The model for suicide plans/attempts was statistically

significant, ($\chi^2(5)$ = 89.39, p < .001). The model explained 44.7% of the variance

(Nagelkerke R^2) and prediction success overall was 71.4%. Teacher connectedness was

associated with lower odds of having planned or attempted suicide (OR = 0.89, CI =

0.80-0.99). Peer and school connectedness were not associated with suicide

plans/attempts, nor was gender identity.

Insert Table 4

The Influence of Having an LGBT Identity

Participants were asked what influence being LGBT had on their experiences of

connectedness, self-esteem, depression, and self-harm/suicidality. Responses are

presented in Table 4. There was generally a negative influence of being LGBT (42% -

57%) or no influence (33% - 47%), however some reported that being LGBT had a

positive influence on some measures (6% - 11%). Of the four measures, being LGBT

had the most positive (and least negative) influence on connectedness experiences, which was also reflected in some participants' comments at the end of the survey.

Although questions about family were not included in the survey, when given the opportunity to provide additional comments, many participants talked about their family's views on their LGBT identity, or the LGBT community, indicating that this is a pertinent issue for LGBT youths. Comments were generally positive, with many participants saying that their family had been accepting and supportive, whilst some felt their family had negative views about the LGBT community and would not accept their identity if they were to 'come out'. 'Coming out' was a common theme, with many participants feeling as though they could not tell their friends or family about their LGBT identity as they were afraid of the potential consequences. Other participants talked about a transition in their relationship with their LGBT identity after 'coming out', feeling that accepting their LGBT identity and being open with others improved their mental health. Reasons for this included developing a sense of pride and confidence in embracing their identity, attributed to feeling more connected to the LGBT community and other LGBT young people, with some reporting that their closest friends also identify as LGBT.

Participants varied in their experiences at school, with many talking about a lack of acceptance and understanding from teachers and peers, and in some cases derogatory comments being made. Others talked about their school environment helping to facilitate their acceptance and pride of their LGBT identity, which also seemed to be associated to having more LGBT peers. Although some participants had a positive school experience, many young people felt that school should be doing more, including having more LGBT awareness for students and teachers, making the curriculum more inclusive, and having LGBT groups for students. Those that already had these in place

at their school talked about the positive impact these have had, including increased acceptance among their peers, indicating a need to consider these when developing mental health interventions for LGBT youths.

Discussion

This is the first study to explore the association between school, teacher, and peer connectedness and the mental health of LGBT youths in the UK. Results indicate that the three different connectedness constructs have individual influences on self-harm and suicidality of LGBT youths.

The Influence of Connectedness

Teacher connectedness was significant across the three models, indicating that higher teacher connectedness was associated with a reduced likelihood of self-harm, suicidal ideation, and suicide plans/attempts. Previous findings in this area have been mixed (see the systematic literature review in the previous section of this thesis), however this may be due to the difference in measures used. Earlier studies have conceptualised teacher connectedness using just one question, whilst the current study used a 5-item measure to explore different aspects of teacher connectedness, indicating a more reliable measure of teacher connectedness (Frytak & Kane, 2006). Future research should continue using multiple-item measures to ensure higher levels of reliability and consistency across studies.

One review found that common functions of self-harm are help-seeking and communicating distress (Edmonson, Brennan, & House, 2015) and it may be that those students that feel less connected to teachers are more likely to self-harm to access additional support and increase connectedness with teachers. Teachers should be made aware of their influence in students' mental health, and in particular high-risk groups such as LGBT youths. Efforts to provide additional support to vulnerable young people

may increase their perceived connectedness and prevent them from engaging in self-harm. Teacher connectedness could be enhanced for LGBT youths by ensuring teachers avoid heteronormative or cisnormative language and assumptions, deliver an LGBT inclusive curriculum, and intervene when they hear homophobic, biphobic, or transphobic victimisation. Consideration and incorporation of these factors are therefore crucial when developing interventions for self-harm and suicide prevention.

Contrary to previous research (Taliaferro & Muehlenkamp, 2016; Veale et al., 2017), peer connectedness was not associated with suicide attempts, however higher peer connectedness was found to be significantly associated with increased odds of self-harm and suicidal ideation. One possible explanation is that LGBT youths may experience connectedness with other youths that engage in self-harming and suicidal behaviours. There is evidence that peer socialisation effects may occur in regard to self-harming and suicidal behaviour, with an adolescent's knowledge or perceptions of a close friends' self-harming and suicidal behaviour predicting their own future self-harming behaviour and suicidal ideation (Prinstein, Boergers, & Spirito, 2001; Prinstein, Guerry, & Rancourt, 2007; Quigley, Rasmussen, & McAlaney, 2016). This is because knowing peers that self-harm may contribute to a perceived peer or group norm, which can increase engagement in and permissiveness of particular behaviours of adolescents (Heilbron & Prinstein, 2008).

However, peers can have a positive influence in reducing the risk of self-harm and suicidality when they are provided with the appropriate knowledge and skills in how to notice and respond to such behaviour. For example, Wyman et al. (2010) evaluated a suicide prevention programme in which adolescents were trained as peer leaders at their school. They found that training increased perceptions that adults at school help suicidal students, increased the norms for help-seeking from adults at

school, and increased the likelihood that the peer leaders would refer a suicidal friend to an adult. Implementing interventions such as this can help to reduce self-harm and suicidality in a number of ways. Firstly, it can help promote positive supportive peer connections in relation to self-harm and suicidality, reducing the risk of negative socialisation effects. Secondly, students can be referred to an adult who would be able to provide additional regular support and source further input if necessary. Finally, it can serve to increase perceived teacher connectedness, which was found to be associated with reduced self-harm, suicidal ideation, and suicide planning/attempts in the present study.

In contrast to previous findings (see the systematic literature review in the previous section of the present thesis), the current study found no association of school connectedness with self-harm, suicidal ideation, or suicide plans/attempts. One possible explanation for this may be the variety of definitions and measures of school connectedness across studies. Many previous studies have included questions regarding peer and teacher connectedness within the measure of school connectedness, indicating that previous results may reflect relationships with others at school. This study however separated these three constructs as recommended by García-Moya et al. (2018), and found different influences of these three constructs, which may explain the inconsistency in findings. Importantly, the results of this study do not indicate that school connectedness is irrelevant in suicide prevention, but that it may not have as big an impact as other, more specific constructs, such as teacher connectedness. Furthermore, no studies examining this association have previously been conducted in the UK, with most conducted in the USA. The UK education and legal systems differ from other countries, as do specific laws and policies on protecting LGBT individuals, both at a societal and a school level. This indicates that experiences of LGBT youths in

the UK may differ from those in other countries, and therefore different factors may influence their mental health.

Further Considerations

Chi-square analyses reported that trans participants were significantly more likely to self-harm, experience suicidal ideation, and plan/attempt suicide than cisgender participants, which is consistent with previous research (McDermott et al., 2017; Nodin et al., 2015). In the final regression models, when controlling for connectedness and depression, gender identity remained significantly associated with self-harm and suicidal ideation but not suicide plans/attempts. This indicates that having a trans identity may directly contribute to an increased risk of self-harm and suicidal ideation, whilst disparities in trans individuals' experiences of suicide plans/attempts may be explained through other factors such as depression or connectedness. This direct link between gender identity and self-harm may be explained by previous findings that trans youth often feel imprisoned by their own bodies and focus their self-harm on the genitals or breast areas as these parts of the body represent a gender that they do not identify with (Pardoe & Trainor, 2017). Future research would benefit from exploring factors that increase the risk of trans participants engaging in self-harm and experiencing suicidal ideation beyond depression and connectedness experiences.

The results show that overall, being LGBT had a negative influence on participants' feelings of connectedness and mental health. It is however important to acknowledge that for some participants, their LGBT status had a positive influence on these experiences, indicating that additional factors may contribute to the negative influence of LGBT identity for some youths. Future research would benefit from

further exploration of the positive influence of LGBT identity to enable identification and promotion of factors that contribute to making this experience positive.

When considering the findings of this study, it is important to acknowledge that there are additional factors not included in this study that are consistently reported to influence the mental health of LGBT youths, such as victimisation and family attitudes (Haas et al., 2011; Katz-Wise, Rosario, & Tsappis., 2016). These themes emerged when participants were given the opportunity to provide additional information, indicating that they may be influential in participants' experiences of self-harm and suicidality. It would be beneficial for future UK research to extend the current research to gain a better understanding of the influence and interactions of additional factors on LGBT youth mental health.

Limitations

The main limitation of this study is that it used a cross-sectional design, and therefore cannot determine the direction of the associations. Furthermore, the measures used assess current connectedness, self-harm in the past 6 months, suicidal ideation in the past 12 months, and lifetime suicide plans/attempts, highlighting a risk that connectedness is measured as an outcome. Although previous longitudinal research has reported that school connectedness predicts mental health outcomes rather than the reverse (Shochet, Dadds, Ham, & Montague, 2006), it is not possible to determine directionality in the current study. Future UK research would benefit from having a longitudinal design, although the present study is the first to explore these associations and therefore provides important evidence in this area.

The second limitation concerns the questions used to measure connectedness. In the current study, the three connectedness measures contained 4 or 5 items each and all yielded adequate internal reliability estimates (i.e. all Cronbach's alphas > .70). It

is crucial to acknowledge that definitions and conceptualisations of connectedness vary

greatly in the literature, and no globally agreed measure has been agreed upon (García-

Moya et al., 2018), limiting the ability to compare findings from different studies. The

measures used in the current study may not therefore have captured the range of

connectedness experiences or may have measured additional constructs that do not

reflect the connectedness domains. For example, two of the items asked in the school

connectedness explored participants' academic experiences, rather than emotional

connection to school. Higher levels of school connectedness may then in part reflect

participants' academic success rather than solely their relationship with the school

environment. The evidence base would benefit from future qualitative studies that

further explore the role of connectedness for LGBT young people. This would help

identify ways in which they feel it is beneficial to their mental health, and how they feel

it could be improved. This would also help identify which elements of connectedness

are most crucial, therefore informing how these constructs should be measured and

operationalised to improve the validity and reliability of research in this area.

Finally, this study did not ask participants to report the school they attend

therefore it was not possible to control for school-level factors within the analysis.

There may be school-level factors that influence feelings of connectedness for LGBT

youths, for example having an inclusive curriculum or LGBT groups may increase

feelings of connectedness, whilst some schools may actively discourage promotion or

acknowledgement of LGBT attitudes or behaviours (e.g. in line with religious beliefs

of the school), which could result in lower connectedness, and an increase in mental

health difficulties. As this project was advertised through schools, there is an initial

selection bias at a school level. The schools that shared the information of this study

with their students are more likely to be more inclusive in regard to LGBT issues than

those that declined and may therefore somewhat limit the generalisability of the findings. In order to overcome this issue, it would be beneficial for government level data to be routinely collected from students in all schools in the country to gain a better understanding of their experiences, similar to the state-wide studies conducted in the USA (i.e. AddHealth).

Conclusion

Teacher connectedness was associated with a reduced risk of self-harm, suicidal ideation, and suicide plans/attempts, highlighting this as a key area to consider when developing interventions for self-harm and suicide prevention. Although peer connectedness was associated with increased self-harm and suicidal ideation, many participants wrote about the positive influence that their peers had on their mental health and self-confidence. Interventions for self-harm and suicide prevention for LGBT youths should focus on strengthening teacher connectedness and enhancing the positive influence of peers. This could be achieved through school strategies such as the provision of an inclusive curriculum, LGBT groups, Stonewall champions, and other practices within schools aimed at improving inclusion. Peer influence could be further improved by increasing education around mental health and self-harm, as this could help to diminish the possible effects of peer socialisation in regard to self-harm and make it more likely that young people seek help from adults (Prinstein et al., 2007; Quigley et al., 2016).

The UK government have recently focussed more attention on improving the mental health of young people and recognise that LGBT youths are a particularly vulnerable group (UK Parliament, 2017). Although they have started implementing interventions aimed at reducing homophobia, biphobia, and transphobia in schools, they recognise more could be done to improve the mental health of LGBT youths. This

study can be used to inform national suicide prevention strategies as it provides

evidence that strengthening teacher connectedness and enhancing the positive influence

of peers may reduce self-harm and suicidality in LGBT youths in the UK.

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Table 1

Descriptive and Cross-Tab Statistics

		Total n (%)	Self-Harm			Suicidal Ideation			Suicide Plans/Attempts		
			No (n)	Yes (n)	% yes	No (n)	Yes (n)	% yes	No (n)	Yes (n)	% yes
Total		219	104	115	52.5	92	127	58.0	106	113	51.5
Age	13	52 (23.7)	24	28	53.8	22	30	57.7	30	22	42.3
	14	39 (17.8)	13	26	66.7	14	25	64.1	17	22	56.4
	15	50 (22.8)	22	28	56.0	18	32	64.0	21	29	58.0
	16	78 (35.6)	45	33	42.3	38	40	51.3	38	40	51.3
Sexual Orientation	Gay/Lesbian	52 (23.7)	26	26	50.0	27	25	48.1	27	25	48.1
	Bisexual	69 (31.5)	41	28	40.6	37	32	46.4	34	35	50.7
	Pansexual	42 (19.2)	16	26	61.9	10	32	76.2	19	23	54.8
	Questioning	16 (7.3)	9	7	43.8	9	7	43.8	10	6	37.5
	Other	40 (18.3)	12	28	70.0	9	31	77.5	16	24	60.0
Gender Identity	Trans	95 (43.4)	30	65	68.4	28	67	70.1	36	59	62.1
	Cisgender	124 (56.6)	74	50	40.3	64	60	48.4	70	54	43.5

Table 2

Descriptive Statistics and Correlations between Measures[a]

	1	2	3	4	5	M	SD	Min	Max
1. School Connectedness	1					12.64	4.40	4	20
2. Teacher Connectedness	0.59	1				18.40	4.44	5	25
3. Peer Connectedness	0.58	0.61	1			14.12	4.00	4	20
4. Depression	-0.45	-0.47	-0.59	1		30.43	13.84	0	60
5. Self-esteem	0.49	0.46	0.48	-0.74	1	12.60	5.90	0	30

[a]All correlations are significant at p < .001

Table 3

Binary Multiple Logistic Regression Models for Self, Harm, Suicidal Ideation, and Suicide Plans/Attempts

	Self-Harm			Suicidal Ideation			Suicide Plans/Attempts		
	B	SE	Exp(B)	B	SE	Exp(B)	B	SE	Exp(B)
Gender Identity (Trans)	1.10**	.35	3.01	.78*	.36	2.19	.42	.35	1.53
Depression	.12***	.02	1.12	.13***	.02	1.14	.11***	.02	1.11
School Connectedness	.03	.06	.98	-.02	.06	.98	-.03	.05	.97
Teacher Connectedness	-.16*	.06	.86	-.14*	.06	.86	-.12*	.06	.90
Peer Connectedness	.21*	.07	1.24	.19**	.07	1.21	.09	.07	1.09
Constant	-3.82			-3.54			-2.03		

Note: Controls are cisgender identity and gay/lesbian sexual orientation.

*p < .05; **p < .01; ***p < .001

Table 4

Responses Regarding the Impact of Being LGBT for Different Measures

	Connectedness Measures (%)	Self-esteem (%)	Depression (%)	Self-harm and Suicidality (%)
Very Negative	4.6	13.8	11.9	18.3
Somewhat Negative	37.0	43.3	40.8	28.0
No Impact	47.5	33.2	40.8	46.8
Somewhat Positive	9.1	8.3	5.5	4.6
Very Positive	1.8	1.4	0.9	2.3

Appendix 2

Author Guidelines for the Journal of Suicide and Life-Threatening Behavior

Author Guidelines

Submissions
As of December 1, 2010 all manuscript submissions to Suicide and Life-Threatening Behavior can be made online via Manuscript Central, the web-based submission, tracking and peer review system.

Suicide and Life-Threatening Behavior is devoted to emergent theoretical, scientific, clinical, and public health approaches related to violent, self-destructive, and life-threatening behaviors. It is multidisciplinary and concerned with a broad range of related topics including, but not limited to, suicide, suicide prevention, death, accidents, biology of suicide, epidemiology, crisis intervention, postvention with survivors, nomenclature, standards of care, clinical training and interventions, violence.

Brief Summary. Manuscripts should be submitted with a 200-word abstract. The entire manuscript, including references, quotations, text, and tables, and be double-spaced. American Psychological Association (APA) standard style should be used. Manuscript length, except under unusual circumstances, should not be over 20 double-spaced pages, and, ordinarily, should be shorter.

Original Contributions. Authors should only submit manuscripts that have not been published elsewhere, and are not under review by another publication. Cover Letter. With your submission include a cover letter designating one author as correspondent for the review process, and provide a complete address, including phone and fax. In this letter please attest that neither the manuscript nor any other substantially similar paper has been published, except as described in the letter. The corresponding author should also attest that in the case of several authors, each one has studied the manuscript in the form submitted, agreed to be cited as a coauthor, and has accepted the order of authorship. If author affiliations are given with regard to academic, hospital, or institutional affiliations, it is the author[s] responsibility to obtain any required permissions from the proper authorities to utilize such affiliations.

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Manuscript Preparation. Your paper should be double spaced and submitted in Microsoft Word. On the title page list the full names, affiliations, and professional degrees of all the authors. Abbreviations should not be used in the title or abstract, and should be very limited in the text.

Abstracts. An abstract of up to 200 words must include the following sections and headings: Objective: a brief statement of the purpose of the study; Method: a summary of study participants (sample size, age, gender, ethnicity), and descriptions of the study design and procedures; Results: a summary of the primary findings; Conclusions: a statement regarding the implications of the findings. Below the abstract, supply up to five keywords or short phrases.

References. Reference lists should be prepared according to the style illustrated in the articles in this issue of the journal. This approach minimizes punctuation in the specific references, but utilizes the author and date in the text of the articles, to provide maximum information quickly to the reader.

Illustrations. Graphics should be executed in Microsoft Excel in either Mac or IBM formats for making graphs. If this is not possible, please submit camera ready copy. In all cases indicate the correct positioning of the item in the text. Illustrations should be cited in order in the text using Arabic numerals. A legend should accompany each illustration, and not exceed 40 words. Please include reproductions of all illustrations. As the author you are ultimately responsible for any required permissions regarding material quoted in your text, tables, or illustrations of any kind.

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Reviews and Decisions. Manuscripts are generally sent to outside reviewers, and you will be informed of the editorial decision as soon as possible. Ordinarily a decision will be reached in about 3 months after submission is acknowledged. A request for revising the manuscript along the lines suggested by the Editor and reviewers does not constitute a decision to publish. All revised manuscripts will be re-evaluated, and the Editors reserve the right to reject a paper at any point during the revision process.

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Section Three: Critical Appraisal

Critical Reflections on the Current Study and the Wider Research

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Critical Appraisal

Improving support for children and young people's mental health is a top priority for the UK government which emphasises the role of schools and colleges in ensuring effective interventions and prevention strategies. In the government's recent green paper, which is jointly authored by the Department of Health and Education, LGBT youth have been recognised as a particularly at-risk group and the importance of reducing homophobia, biphobia, and transphobia in schools to improve LGBT youth mental health is highlighted (UK Parliament, 2017). However, there is little UK research that has examined how schools may contribute to improving the mental health of LGBT youth. In order to maximise the effectiveness of school-based mental health interventions for LGBT youths, it is necessary to gain a better understanding of factors that protect against poor mental health in this population.

The aim of this study was to examine the influence of school, teacher, and peer connectedness on experiences of self-harm and suicidality of LBGT youths in the UK. This study found that teacher connectedness is associated with reduced self-harm and suicidality, whilst peer connectedness was associated with an increased risk of self-harm and suicidality. School connectedness was not significantly associated with either self-harm or suicidality, indicating that relationships with peers and teachers are more influential in the mental health of LBGT youths than the school environment itself. These findings provide an important insight into where to target interventions for self-harm and suicidality for LGBT youths. Such interventions may benefit from focussing on improving teacher connectedness and enhancing the positive influence of peer relationships.

Strengths

This study was the first to explore the influence of school-based connectedness on the mental health of LGBT youths in the UK, providing new evidence for the role of connectedness. These findings will therefore contribute to the evidence base, informing future research in this area. Furthermore, this study has been conducted at a time when more evidence in this area is necessary to inform the development of school-based mental health interventions and national suicide prevention strategies that target those groups most at risk.

One strength of this study is the way in which it measured LGBT identity, as LGBT youths were able to self-define their identity. Many studies measure LGBT status by same-sex attraction or same-sex behaviour, rather than by LGBT identity, however there is a lack of concordance between these measures, with over half of individuals reporting same-sex attraction or behaviour identifying as heterosexual (Gates, 2011; Geary et al., 2018). Research demonstrates that although LGBT youths experience poorer mental health than non-LGBT youths (Haas et al., 2011; Semlyen, King, Varney, & Hagger-Johnson, 2016), there are no differences between heterosexual youths that report same-sex attraction or behaviour and those that do not (Zhao, Montoro, Igartua, & Thombs, 2010). This indicates that same-sex attraction and behaviour may have little influence on mental health, whilst identifying as LGBT does. This may be in part because LGBT youth commonly experience school-based discrimination and victimisation compared to heterosexual-identified youths (United Nations Educational, Scientific, and Cultural Organization, 2016), which may include those with experiences of same-sex attraction and behaviour.

As this study explores the influence of school factors on the mental health of school-aged LGBT youth, measuring LGBT status by self-identification is a more appropriate measure than same-sex attraction or behaviour. This enables a more valid

and reliable exploration of these factors within a population that is known to experience disadvantages in relation to school experiences and mental health.

Furthermore, this study was open to all LGBT youths, including those that are trans or questioning their identity. There is currently a dearth of research exploring the influence of connectedness on trans youths, although they have been found to be at an even greater risk of suicide than other LGBT youths (McDermott, Hughes, & Rawlings, 2017). Over 40% of the participants in this study identified as trans, allowing for exploration of the influence of having a trans identity on self-harm and suicidality. Although much LGBT research excludes youths questioning their sexual orientation, these young people are at a higher risk of negative mental health outcomes than those that identify as gay/lesbian (Shearer et al., 2016). Research has also demonstrated that teacher connectedness may be more associated with the mental health of questioning youths than gay, lesbian, or bisexual youths (Taliaferro & Muehlenkamp, 2017), therefore results of LGBT studies excluding questioning youth may be unreliable.

This study asked what impact participants thought their LGBT status has had on various experiences. This is important, as it is widely considered that LGBT youths are a vulnerable group, and that LGBT identity is a risk factor for lower connectedness and poorer mental health (Eisenberg & Resnick, 2006; Teasdale & Bradley-Engen, 2010; Ueno, 2005). Although this is undoubtedly the case for many LGBT youths, it is much less frequently acknowledged that having an LGBT identity may have a positive influence on individuals' experiences of relationships and mental health. Indeed, this study found that this was the case for several of the participants, however the reasons for this were not explored. Previous research suggests that factors such as having LGBT groups in school can help students feel more positive about their LGBT identity, whilst contributing to improvements in connectedness and mental health (Chrisler,

Smischnev, & Villarruel, 2014; Higa et al., 2014), which may contribute to a positive

influence of LGBT identity on these factors. However, the reasons for the positive

influence of LGBT identity in the current study are not known, which highlights a need

for further exploration of LGBT status as a positive experience. This would enable

identification of factors that contribute to making this experience positive, and the

mechanisms through which this is achieved. Having a greater understanding of this can

help to inform prevention and intervention strategies, with a focus on enhancing these

factors.

Another strength of this study was that it gave participants the opportunity to

share additional information, which many chose to do. Although these comments

covered a range of experiences, many participants provided information on specific

factors that they felt had helped make their experiences of being LGBT positive, or

factors that may help facilitate this. This highlights the importance of asking this

population what they feel would improve their experiences and their mental health,

giving them the opportunity to provide valuable information in regard to effective

interventions. This is particularly noteworthy when considering that some participants

articulated their thanks for the research, as they felt that more needs to be done, and felt

it meant someone cared about their wellbeing. This has been reported in previous

research (McDermott, Hughes, & Rawlings, 2016) and suggests that LGBT youths may

generally feel that they lack the opportunity to share their experiences with others,

therefore to be able to do so in this study was beneficial. Giving LGBT youths the

opportunity to participate in research is important in order to gain knowledge about

their needs and enable the development of culturally sensitive, appropriate, and

effective interventions (Elze, 2009). This could in turn provide them with a sense of

pride and achievement that they have contributed to society's knowledge about LGBT

youth and influenced support provided.

Limitations

Although this study was interested exploring how experiences of connectedness

influence self-harm and suicidality, it used a cross-sectional design and therefore

directionality could not be determined. Due to the design and the measures used, it is

possible that the findings reflect the ability of LGBT youth mental health to influence

connectedness, rather than the other way around. Although previous longitudinal

research demonstrates that school connectedness predicts mental health outcomes rather

than the reverse (Shochet, Dadds, Ham, & Montague, 2006), it is not possible to

determine directionality in the current study. Nevertheless, it is the first study to explore

this association for LGBT youths in the UK, therefore contributing critical research to

the evidence base. It has highlighted that an association between these factors does

indeed exist, and future research should extend these findings by conducting larger-

scale longitudinal research to enhance understanding of the relationship between

connectedness and mental health.

It is important to acknowledge that sampling bias may have influenced the

results. This study was advertised on both Twitter and Facebook, however primarily

through LGBT groups or organisations on these sites. Many LGBT young people may

not access these groups online for fear of others finding out about their LGBT identity,

difficulties with accepting or being sure of their identity, or because of a lack of

connectedness with the LGBT community. Young people that learnt of the study online

may therefore be more comfortable with their LGBT identity and more likely to have

'come out' than other LGBT youths, which may have led to a sample that is not

necessarily reflective of the whole LGBT youth population (McDermott & Roen,

2012). Nevertheless, it has been demonstrated that online methods used in LGBT youth research are effective in recruiting LGBT youths who might not otherwise participate in research (McDermott & Roen, 2012), therefore the use of an online survey in the current study may have achieved a more representative sample than recruiting offline would have, and can therefore to some extent be considered a strength of this study.

Another way in which sampling bias may have influenced the results of this study is by which schools disseminated the study information. Although all schools in the UK were emailed asking them to distribute the information, only a small number responded to say that they would, whilst some declined the opportunity to share the information and the majority did not respond. Of those that shared the information with their students, many expressed their interest in this research area, providing information about their LGBT groups and stonewall champions, and asked to be sent a summary report once the thesis was completed. This indicates that there may be a bias whereby those schools that shared the information with their students may have been more likely to be more supportive of LGBT students and provide a more affirmative environment. Students that attend these schools may therefore feel more connected to their school, and perhaps teachers and peers, than those that attend schools that did not share the information.

Although there are many reasons that schools may not share the information of the study with their students (many said that they were already involved in research projects or their staff were too busy to disseminate the information), it is important to consider other reasons that schools may not want to share the study. For example, the emails explain that the research is interested in how school experiences may influence the mental health of LGBT youths. This may have deterred some schools from sharing the information with their students for fear that they will disclose that the school could

be more supportive, or share negative school experiences. Secondly, many of the schools emailed were faith schools. Although many faith schools are likely to support their LGBT students, they are reported to be less supportive of LGBT students than other schools (Bradlow, Bartram, Guasp, & Jadva, 2017), with some faith schools blanking out mentions of homosexuality from textbooks (Buck, 2018). Finally, these schools and others may believe that they do not have LGBT students at their school and therefore it would not be beneficial to share the information. LGBT students that attend such schools are more likely to experience lower levels of connectedness and poorer mental health in regard to their LGBT identity.

It is important to note that the majority of schools that did not respond or declined are unlikely to have done so due to being an unsupportive environment for LGBT youths. It should however be considered that schools that are less supportive of LGBT students may be less likely to share the information than those who are more supportive. This then increases the risk of sample bias, whereby those that took part in the study may experience higher levels of school-based connectedness than the general LGBT youth population.

In addition to sample bias, the sample may have also been influenced by self-selection bias, whereby participants who feel that the study is particularly relevant to them are more likely to take part. Firstly, the study was advertised to individuals that identify as LGBT. Those who publicly identify as LGBT may have been more likely to complete the survey compared to those that have not shared their LGBT status with others, those that are questioning or unsure, or those that have a minority sexual or gender identity that they may consider not covered by the acronym LGBT. This sample may therefore have a larger proportion of lesbian, gay, bisexual, and trans youths, particularly those that have disclosed their LGBT identity, than is reflective of the

wider LGBT youth population. Secondly, individuals that experience poorer mental health, and those that feel that their school influences their mental health may be more likely to complete the survey than others due to feeling it is particularly relevant and therefore wanting to share their experiences.

This survey did not ask participants if others were aware of their LGBT identity, which may have a significant influence on their experiences of being LGBT, and their subsequent mental health. Research has found that individuals that identify as LGBT experience lower levels of connectedness and poorer mental health than those that do not (Eisenberg & Resnick, 2006). It may be that those who have not 'come out' to others do not experience the same disparities as those who have, due to less direct discrimination and victimisation.

This study did not account for other factors that are consistently reported to influence the mental health of LGBT youths, such as victimisation and family relationships (Haas et al., 2011; Katz-Wise, Rosario, & Tsappis, 2016). Research from the US demonstrates that victimisation and family relationships may influence the relationship between school-based connectedness and LGBT youth mental health (Diaz, Kosciw, & Greytak, 2010; Eisenberg & Resnick, 2006; Espelage, Aragon, Birkett, & Koenig, 2008; Teasdale & Bradley-Engen, 2010). Themes of victimisation and family influence were evident across participants' comments at the end of the survey, indicating that these were important factors in their experiences of connectedness and mental health. It is possible that in the current study, experiences of victimisation or family may have influenced or confounded the results by having an additional influence on the association between connectedness and mental health. Future research would benefit from exploring these factors in addition to connectedness

to increase understanding of the influence and interactions of these factors on the mental health of LGBT youths, and ways in which we can reduce these risks.

Although a strength of this study is that it separated school, teacher, and peer connectedness into different concepts as recommended by García-Moya, Bunn, Jiménez-Iglesias, Paniagua, & Brooks (2018), there is a lack of consensus around definitions and conceptualisations of connectedness. Therefore, the measures used in the current study may not have included the range of experiences that contribute to the connectedness domains or may have captured additional constructs that do not reflect connectedness experiences. It would be beneficial for future research to determine which elements of the connectedness constructs are most important in the mental health of LGBT youths to enable studies in this area to not only ensure reliable and valid measures are being used, but that particular elements that have been highlighted as having a significant influence can subsequently be used in suicide prevention.

Future Research

There is a need to conduct further research into factors that protect LGBT youths against self-harm and suicidality. Most existing studies into LGBT youth mental health focus on risk factors, which may only go so far in improving mental health in this population (McDermott & Roen, 2016). This study provides evidence that relationships with teachers can protect LGBT youths against self-harm and suicidality, indicating that this may be a key area to consider when developing effective interventions. In order to do this, further research is needed that identifies ways in which experiences of teacher connectedness could be enhanced for LGBT students.

The results of the current study also indicate that peer connectedness is associated with an increased risk of self-harm and suicidal ideation for LGBT youths. Although this may be explained in part by peer socialisation effects (Heilbron &

Prinstein, 2008; Quigley, Rasmussen, & McAlaney, 2016), it is a somewhat concerning

finding and it is important to explore the mechanisms behind this association. It is

however also important to consider that many participants in this study talked about the

positive influence of their peers, indicating that there are ways in which peer

relationships can protect against poor mental health in LGBT youths. Further research

is needed that examines ways in which peer relationships may increase the risk of, or

protect against poor mental health of LGBT youths, and in what ways the positive

influence of peers can be enhanced.

To date, the majority of research on the influence of school-based

connectedness on LGBT mental health has been conducted using a cross-sectional

design, which limits the ability to determine cause and effect. Although the current

study found that teacher connectedness was associated with reduced self-harm and

suicidality, more longitudinal studies are required to understand the causal role of

teacher connectedness and to explore the mechanisms by which teacher connectedness

may protect against self-harm and suicidality over time. Furthermore, longitudinal

studies can help to better understand the association between peer connectedness and

LGBT youth mental health and explore directionality of this association. This would

advance understanding of the ways in which these factors may influence each other and

help to inform appropriate and effective targeted clinical interventions and national

suicide prevention strategies.

Research into LGBT youth mental health in the UK is somewhat limited by the

challenges of accessing this population. Researchers often rely on methods that are

likely to reach LGBT youths that access LGBT-specific resources, for example

community or online LGBT groups and organisations. Future research would benefit

from larger-scale studies that have the ability to access LGBT youths that are less

connected to the LGBT community. This could be done through nationwide school surveys that explore young people's experiences, and which include questions on sexual orientation and gender identity. Although the Department for Education (2017) regularly collects data on schools, pupils, and their characteristics, they do not include a measure of sexual orientation or gender identity, and experiences of young people are not explored. Such surveys are regularly conducted across the US and are commonly the source of data for studies that explore LGBT youth mental health. This would benefit the evidence base both in terms of larger sample sizes and a reduction in both sampling and self-selection bias.

Future studies in this area should ensure that definitions and measures of connectedness are consistent in order to improve homogeneity of findings and contribute a more valid and reliable evidence base. Future research into the mental health of LGBT youths should also ensure that valid measures of LGBT identity are used, and that samples include trans youths, and youths who are questioning their sexual orientation, to ensure that the sample is reflective of the target population.

Conclusion

Although this study has some limitations, it is the first to explore the role of school-based connectedness on the mental health of LGBT youths in the UK, and therefore is a valuable contribution to the evidence base. The findings of this study suggest that strengthening teacher connectedness and enhancing the positive influence of peers may reduce self-harm and suicidality in LGBT youths. The results of this study can be used to inform national suicide prevention strategies, whilst future research can build on these findings in order to further explore the mechanisms by which these associations occur.

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Section Four: Ethics Proposal

Self-Harm and Suicidality Among Lesbian, Gay, Bisexual and Trans Youth: The

Role of School-Based Connectedness

Phaedra Robinson

Doctorate in Clinical Psychology

Lancaster University

Lancaster University

Applicant: Phaedra Robinson
Supervisors: Pete Greasley and Liz McDermott
Department: Health Research
FHMREC Reference: FHMREC16128

20 July 2017

Dear Phaedra

Re: The influence of school-based connectedness, depression and self-esteem on self-harm and suicidality in LGBT youths.

Thank you for submitting your research ethics application for the above project for review by the **Faculty of Health and Medicine Research Ethics Committee (FHMREC)**. The application was recommended for approval by FHMREC, and on behalf of the Chair of the Committee, I can confirm that approval has been granted for this research project.

As principal investigator your responsibilities include:

- ensuring that (where applicable) all the necessary legal and regulatory requirements in order to conduct the research are met, and the necessary licenses and approvals have been obtained;

- reporting any ethics-related issues that occur during the course of the research or arising from the research to the Research Ethics Officer at the email address below (e.g. unforeseen ethical issues, complaints about the conduct of the research, adverse reactions such as extreme distress);

- submitting details of proposed substantive amendments to the protocol to the Research Ethics Officer for approval.

Please contact me if you have any queries or require further information.

Tel:- 01542 592838
Email:- fhmresearchsupport@lancaster.ac.uk

Yours sincerely,

Dr Diane Hopkins
Research Integrity and Governance Officer, Secretary to FHMREC.

Faculty of Health and Medicine Research Ethics Committee (FHMREC)
Lancaster University

Application for Ethical Approval for Research

for additional advice on completing this form, hover cursor over 'guidance'.

Guidance on completing this form is also available as a word document

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Title of Project: Self-Harm and Suicidality Among Lesbian, Gay, Bisexual and Trans Youth: The Role of School-Based Connectedness

Name of applicant/researcher: Phaedra Robinson

ACP ID number (if applicable)*:   **Funding source (if applicable)**

Grant code (if applicable):

*If your project has *not* been costed on ACP, you will also need to complete the Governance Checklist [link].

Type of study

☐ Involves existing documents/data only, or the evaluation of an existing project with no direct contact with human participants. **Complete sections one, *two* and four of this form**

☒ Includes *direct* involvement by human subjects. **Complete sections one, *three* and four of this form**

SECTION ONE

1. Appointment/position held by applicant and Division within FHM   Trainee Clinical Psychologist

2. Contact information for applicant:
E-mail: p.robinson@lancaster.ac.uk   **Telephone**: 07772194944 (please give a number on which you can be contacted at short notice)

Address: Department of Health and Medicine, Furness Building, Lancaster University

3. **Names and appointments of all members of the research team (including degree where applicable)**

Pete Greasley, Teaching Fellow.
Liz McDermott, Senior Lecturer.

---

3. If this is a student project, please indicate what type of project by marking the relevant box/deleting as appropriate: (please note that UG and taught masters projects should complete **FHMREC form UG-tPG**, following the procedures set out on the FHMREC website

PG Diploma ☐   Masters by research ☐   PhD Thesis ☐   PhD Pall. Care ☐

PhD Pub. Health ☐   PhD Org. Health & Well Being ☐   PhD Mental Health ☐
MD ☐

DClinPsy SRP ☐   [if SRP Service Evaluation, please also indicate here: ☐]   DClinPsy
Thesis ☒

4. Project supervisor(s), if different from applicant: Pete Greasley

5. **Appointment held by supervisor(s) and institution(s) where based (if applicable)**:
Teaching Fellow, Lancaster University.

SECTION TWO
Complete this section if your project involves existing documents/data only, or the evaluation of an existing project with no direct contact with human participants

1. Anticipated project dates (month and year)
Start date: End date:

2. Please state the aims and objectives of the project (no more than 150 words, in lay-person's language):

Data Management
For additional guidance on data management, please go to Research Data Management
webpage, or email the RDM support email: rdm@lancaster.ac.uk
3. Please describe briefly the data or records to be studied, or the evaluation to be undertaken.

4a. How will any data or records be obtained?

4b. Will you be gathering data from websites, discussion forums and on-line 'chat-rooms' [n o]
4c. If yes, where relevant has permission / agreement been secured from the website moderator? [n o]
4d. If you are only using those sites that are open access and do not require registration, have you made your intentions clear to other site users? [n o]

4e. If no, please give your reasons

5. What plans are in place for the storage, back-up, security and documentation of data (electronic, digital, paper, etc)? Note who will be responsible for deleting the data at the end of the storage period. Please ensure that your plans comply with the Data Protection Act 1998.

6a. Is the secondary data you will be using in the public domain? [n o]
6b. If NO, please indicate the original purpose for which the data was collected, and comment on whether consent was gathered for additional later use of the data.

Please answer the following question *only* if you have not completed a Data Management Plan for an external funder
7a. How will you share and preserve the data underpinning your publications for at least 10 years e.g. PURE?

7b. Are there any restrictions on sharing your data?

8. Confidentiality and Anonymity
a. Will you take the necessary steps to assure the anonymity of subjects, including in subsequent publications? [yes]
b. How will the confidentiality and anonymity of participants who provided the original data be maintained?

9. What are the plans for dissemination of findings from the research?

10. What other ethical considerations (if any), not previously noted on this application, do you think there are in the proposed study? How will these issues be addressed?

SECTION THREE

Complete this section if your project includes *direct* involvement by human subjects

1. Summary of research protocol in lay terms (indicative maximum length 150 words):

Research from Australia and the USA has suggested that for lesbian, gay, bisexual and trans (LGBT) youths, higher feelings of school, teacher, and peer connectedness are associated with higher self-esteem and improved mood. They also protect youths from engaging in self-harm and suicidality, highlighting their importance in preventing suicide in LGBT youths. There is a clear need for more research into such factors in the UK, in order to inform suicide prevention strategies. This study therefore aims to explore the influence of school, teacher, and peer connectedness, self-esteem, and low mood on self-harm and suicidality in LGBT youths in the UK. This study will use an online survey to collect data from participants, although participants can request a paper copy of the survey. Participants will be young people between the ages of 13 and 16 who identify as LGBT and who attend school in the UK.

2. **Anticipated project dates (month and year only**)

Start date: July 2017   End date: May 2018

Data Collection and Management
For additional guidance on data management, please go to Research Data Management
webpage, or email the RDM support email: rdm@lancaster.ac.uk

3. Please describe the sample of participants to be studied (including maximum & minimum number, age, gender):

Participants will be individuals between 13 and 16 years old that identify as being LGBT and who attend school in the UK. Based on calculations, the desired sample size is 114.

4. How will participants be recruited and from where? Be as specific as possible. Ensure that you provide the *full versions* of all recruitment materials you intend to use with this application (eg adverts, flyers, posters).

I will be recruiting participants online, via social media sites and forums. I will specifically target those that focus on either LGBT individuals and/or young people. I will also contact specific organisations and services to request that they disseminate the link to this study, in order to reach a larger participant pool. I will email youth groups, support groups, and schools to advertise my research and will attach a poster to the email so that they can have a physical copy if required. Initially, I will distribute the brief participant information sheet, along with a link to the full information page on the Lancaster University website, which will include a link to the qualtrics survey. Those that do not indicate that they consent or do not meet the inclusion criteria will not be provided with the questionnaires to complete.

5. Briefly describe your data collection and analysis methods, and the rationale for their use.

This is a quantitative study, using online questionnaires for data collection. Online methods have been proven to be successfully used to research LGBT youth and self-harm/suicide (McDermott, 2016) and is effective in recruiting LGBT participants who might not otherwise take part in research (McDermott & Roen, 2011). This method ensures confidentiality and anonymity to participants, in order to recruit a larger sample, and to enable them to feel safe when participating. Participants are given the opportunity to provide additional qualitative information to allow them to share further information about their experiences. Descriptive statistics and associations with independent and dependent variables will be examined using crosstabs, chi-square, ANOVA, and correlations. Three logistic regression models will be conducted with self-harm, suicidal ideation, and suicide plan/attempt as the dependant variables. Independent variables will be school connectedness, peer connectedness, teacher connectedness, depression, and self-esteem, controlling for necessary dependent variables.

6. What plan is in place for the storage, back-up, security and documentation of data (electronic, digital, paper, etc.)? Note who will be responsible for deleting the data at the end of the storage period. Please ensure that your plans comply with the Data Protection Act 1998.

Qualtrics offers the "highest levels of data security" (Qualtrics, 2017) and the survey data is password protected, whereby only the principal researcher will have access. Data will then be input into SPSS and held on Lancaster University's encrypted server on the principal researcher's personal drive. Backups are automated and taken regularly. If data is accessed off-site, it will be done using Lancaster University's Virtual Private Network (VPN) or by using an encrypted memory stick belonging to the prinical researcher. In the latter case, data will not be saved on personal computers but saved back onto the encrypted memory stick. Lancaster University will store the data securely for up to 10 years. In the case of a paper version of the questionnaires being complete, the answers will be input onto the electronic survey software and the paper copies will be destroyed immediately. The principal researcher will have ownership of all of the data until completion of the doctorate programme, at which point ownership will be handed over to the programme research director.

7. Will audio or video recording take place?   ☒ no   ☐ audio   ☐ video
a. Please confirm that portable devices (laptop, USB drive etc) will be encrypted where they are used for identifiable data. If it is not possible to encrypt your portable devices, please comment on the steps you will take to protect the data.

b What arrangements have been made for audio/video data storage? At what point in the research will tapes/digital recordings/files be destroyed?

Please answer the following questions *only* if you have not completed a Data Management Plan for an external funder
8a. How will you share and preserve the data underpinning your publications for at least 10 years e.g. PURE?

Data will be deposited in Lancaster University's institutional data repository (PURE) and made freely available with an appropriate data license.

8b. Are there any restrictions on sharing your data ?

Due to the opportunity for participants to provide qualitative information, there is a small risk that even after full anonymisation, participants may be identified. Therefore, supporting qualitative data will only be shared on request with genuine researchers and access will be granted on a case by case basis by the Faculty of Health and Medicine.

9. Consent

a. Will you take all necessary steps to obtain the voluntary and informed consent of the prospective participant(s) or, in the case of individual(s) not capable of giving informed consent, the permission of a legally authorised representative in accordance with applicable law? yes

b. Detail the procedure you will use for obtaining consent?

An information sheet will be provided via the Lancaster University website. This will include a link at the bottom to the questionnaires on qualtrics. Prior to completing the questionnaires, participants are asked to inform the researcher if they have read and understood all of the information, and if they give their consent to take part in the study, by selecting 'yes' or 'no'. If the answer to these is no, participants will not be given access to the questionnaires. They will be provided with the prinicpal researcher's email address to allow them the opportunity to ask for further information. Although participants will be aged from 13 years old, parental consent to take part in this study will not be requested. This is because many young people have not disclosed their sexuality to others, and may be at an increased risk of harm if they do so, or if confidentiality is not maintained. Mustanski (2011) found that requiring parental consent for LGBT youth under age 18 would likely alter study result and increase participants' appraisals of the risks and discomforts associated with research participation. In line with the ethical principle of autonomy, we want to give all potential participants an equal opportunity to participate in this research, and considering that this is a minority group often overlooked in research, it is important to increase the access to participation in research.This also respects children's rights to make decisions regarding their own lives, including free will to decide about participation in research, is in line with the ethical principle of justice. Furthermore, this area of research has been conducted with young people a number of times without parental consent, with no known negative implications (D'augelli, et al., 2001; McDermott et al., 2016; Mclaren et al., 2015).

10. What discomfort (including psychological eg distressing or sensitive topics), inconvenience or danger could be caused by participation in the project? Please indicate plans to address these potential risks. State the timescales within which participants may withdraw from the study, noting your reasons.

To reduce the potential risk of participants becoming distressed from the content of the questionnaires, I have used previously used, validated questionnaires in this study. I have not asked for any further information about suicidality or self-harm, apart from one question on frequency. Although other studies have asked for functions and methods of self-harm, this was unnecessary for this study, and it may increase the likelihood of the participant become distressed. Participants are made aware of the nature of the questionnaires prior to giving

consent and commencing the survey. Participants are informed that they do not have to complete the questionnaires, and in the event that they become distressed, they are encouraged to stop and contact one of the support services that will be provided. Contact details for Childline, Samaritans, and Stonewall are provided in the information sheet, and again when completing the questionnaires.

Participants are informed that if they choose to take part, they can still change their mind at any point up until completion of the survey. However, once they have completed the survey, it will not be possible for them to withdraw their answers because we will not be able to identify it as theirs.

11. What potential risks may exist for the researcher(s)? Please indicate plans to address such risks (for example, noting the support available to you; counselling considerations arising from the sensitive or distressing nature of the research/topic; details of the lone worker plan you will follow, and the steps you will take).

I am providing participants with my university email address. If I receive any emails or online comments of a distressing nature, or become distressed at the answers provided by participants, I will seek supervision from my tutor, and access further support if necessary.

12. Whilst we do not generally expect direct benefits to participants as a result of this research, please state here any that result from completion of the study.

Although we cannot guarantee any direct benefits of taking part, we hope that participants will find their participation interesting and worthwhile, and it may help them to reflect on their experiences. It could also encourage them to use support services provided in the study when thhey feel it is necessary (whether as a result of this study or in the future). They will also be helping to inform our understanding of how school factors may help to improve the mental health of LGBT young people, which could then be promoted in schools.

13. Details of any incentives/payments (including out-of-pocket expenses) made to participants:
N/A

14. Confidentiality and Anonymity
a. Will you take the necessary steps to assure the anonymity of subjects, including in subsequent publications? yes
b. Please include details of how the confidentiality and anonymity of participants will be ensured, and the limits to confidentiality.
Participants are not requested to provide any identifiable information. The only way the research team would know who had participated is if someone specifically provided this information in the qualitative additional information boxes on qualtrics, or if they contacted us and informed us that this was the case. Due to the anonymity of the surveys, the research team would be unable to identify specific individuals even in the case of risk issues unless this information was explicitly given. However, participants are made aware that if they disclose identifiable information, in addition to information that raises concerns of harm to self or others, the information may be shared with someone in order to keep them safe, which may

include emergency services. Where possible and safe to do so, the individual will be informed of the decision to pass on the information. If identifying information is given (i.e. name, location), this will be removed immediately prior to storing the data.

15. If relevant, describe the involvement of your target participant group in the *design and conduct* of your research.

Previous research has included LGBT youths in the design and conduct of their studies, and I have used the feedback from these to aid with the design of this specific study (McDermott et al., 2016). Furthermore, I have liaised with LGBT professionals working in Child and Adolescent Mental Health Service (CAMHS) and schools who work with LGBT young people, gaining their perspectives on common issues that affect LGBT young people, specifically in terms of the school climate and psychological wellbeing.

16. What are the plans for dissemination of findings from the research? If you are a student, include here your thesis.

The research will be written up into a thesis and the findings will be presented to colleagues and staff at Lancaster University. I will also submit both the literature review and the research paper to a journal that is yet to be determined. Once the study has been reviewed, a summary report may be distributed to some of the organisations that advertised the study and requested a copy of this.

17. What particular ethical considerations, not previously noted on this application, do you think there are in the proposed study? Are there any matters about which you wish to seek guidance from the FHMREC?

SECTION FOUR: signature

Applicant electronic signature: P.Robinson   Date 27/06/17

Student applicants: please tick to confirm that your supervisor has reviewed your application, and that they are happy for the application to proceed to ethical review ☒

Project Supervisor name (if applicable): Pete Greasley   Date application discussed 27/06/17

Submission Guidance

1. **Submit your FHMREC application by email to Diane Hopkins (**d.hopkins@lancaster.ac.uk) as two separate documents:

    i. **FHMREC application form.**
        Before submitting, ensure all guidance comments are hidden by going into 'Review' in the menu above then choosing *show markup>balloons>show all revisions in line.*

    ii. **Supporting materials.**
        Collate the **following materials for your study, if relevant, into a single word document:**

        a. **Your full research proposal (background, literature review, methodology/methods, ethical considerations).**
        b. Advertising materials (posters, e-mails)
        c. Letters/emails of invitation to participate
        d. Participant information sheets
        e. Consent forms
        f. Questionnaires, surveys, demographic sheets
        g. Interview schedules, interview question guides, focus group scripts
        h. Debriefing sheets, resource lists

    Please note that you DO NOT need to submit pre-existing measures or handbooks which support your work, but which cannot be amended following ethical review. These should simply be referred to in your application form.

2. Submission deadlines:

    i. Projects including direct involvement of human subjects **[section 3 of the form was completed]**. The *electronic* version of your application should be submitted to **Diane Hopkins by the committee deadline date.** Committee meeting dates and application submission dates are listed on the FHMREC website. Prior to the FHMREC meeting you may be contacted by the lead reviewer for further clarification of your application. Please ensure you are available to attend the committee meeting (either in person or via telephone) on the day that your application is considered, if required to do so.

ii.   The following projects will normally be dealt with via chair's action, and may be submitted at any time. **[Section 3 of the form has *not* been completed, and is not required].** Those involving:

   a.   existing documents/data only;
   b.   the evaluation of an existing project with no direct contact with human participants;
   c.   service evaluations.

3.   **<u>You must submit this application from your Lancaster University email address, and copy your supervisor in to the email in which you submit this application</u>**

Self-Harm and Suicidality Among Lesbian, Gay, Bisexual, and Trans Youth: The Role of School-Based Connectedness

Principal Researcher: Phaedra Robinson, Trainee Clinical Psychologist, Lancaster University

Research Supervisor: Pete Greasley, Teaching Fellow, Lancaster University

Field Supervisor: Liz McDermott, Senior Lecturer, Lancaster University

Introduction

Suicide rates for young people between 10 and 19 years old in the UK are increasing, and are currently the highest they have been since 2001 (Office for National Statistics, 2016), highlighting a need to improve suicide prevention strategies for young people. Suicidal ideation is one of the most common reasons that young people in the UK seek support from Childline, along with low self-esteem, low mood, loneliness, and self-harm (NSPCC, 2015). Each of these factors has been found to be risk factors for suicide, with some adolescent groups more at risk than others (McLean, Maxwell, Platt, Harris, & Jepson, 2008). Approximately 20% of all adolescents engage in self-harming behaviour (World Health Organisation, 2016), however research suggests that figures are much higher for Lesbian, Gay, Bisexual, and Trans (LGBT) youths, with over half reporting that they self-harm, or have done so previously (Stonewall, 2012; Youth chances, 2014). Furthermore, a recent meta-analysis (Marshal et al., 2011) indicated that LGBT youths have significantly more depressive symptoms and are almost 3 times as likely to report suicidal ideation than heterosexual youths. Importantly, almost half of young people with a minority sexual orientation who have thought about suicide reported that it was at least somewhat related to their sexual orientation (D'Augelli, Hershberger, & Pilkington, 2001).

The higher rates of self-harm and suicidality in LGBT youths warrants attention, as it suggests that factors specific to this group of young people are contributing to an increased risk of suicide. Research suggests that the school environment plays a fundamental role in the mental health of young people, specifically those who identify as LGBT (Tharinger & Wells, 2000). LGBT youths may experience a more negative school environment than heterosexual youths due to common experiences of homophobic victimisation (Stonewall, 2012). Although much is being done to reduce these negative school experiences in the UK (Stonewall, 2015), there is limited research on factors that may constitute a positive school environment and the impact of this on the mental health of LGBT youths in the UK.

Research has found that the concepts of school, peer, and teacher connectedness are related to positive school environments, and are positively associated with the mental health of LGBT youths (Garcia-Moya, Brooks, Morgan, & Moreno, 2014; McLaren, Schurmann, & Jenkins, 2015; Stone, Luo, Lippy, & McIntosh, 2015). School connectedness refers to a psychological sense of school membership (Shochet, Dadds, Ham, & Montague, 2006). Sexual minority youths who feel a sense of connectedness to their school have higher levels of self-esteem, and maintain more positive relationships with their peers, compared to those who do not (Elze, 2003, as cited in McLaren et al., 2015). Furthermore, school connectedness is a protective factor against suicide ideation and suicide attempts in LGBT youths (Stone et al., 2015).

Teachers also have a vital role in establishing a positive school climate for LGBT students (Russell, Seif, & Truong, 2001). Teacher connectedness is described as a feeling of being cared for, respected, and listened to by teachers in the school environment (McLaren et al., 2015). Teacher connectedness has been found to be positively associated with emotional wellbeing in secondary school students (Garcia-

Moya et al., 2014). Further, perceived staff support has been found to protect against multiple suicide attempts among LGBT youths (Goodenow, Szalacha, & Westheimer, 2006).

Peer connectedness refers to feeling supported and accepted by peers at school (Johnson & Johnson, 2000). Higher levels of peer connectedness are associated with higher self-esteem and lower rates of depression in LGBT youths (D'Augelli, 2003; McLaren et al., 2015), whilst negative social relationships are associated with an increased risk of suicide (D'Augelli et al., 2001). LGBT youths have lower levels of school and peer connectedness than heterosexual youths (Saewyc et al., 2009; Stone et al., 2015), suggesting that these may be pertinent in the mental health of LGBT youths.

Although research has identified some factors that may contribute to poorer mental health and higher rates of self-harm and suicidality in LGBT youth, the overall research base is limited, and very little research has been conducted in the UK. Further research in this area may provide UK clinicians with a better understanding of how to reduce or prevent suicide in this population, enabling a more proactive and preventative approach to be taken.

The aim of this study is to explore of the influence of school, teacher, and peer connectedness, low mood, and self-esteem on self-harm and suicidality in 13-16 year olds in the UK that identify as LGBT.

Hypotheses:

1) Lower levels of school, teacher, and peer connectedness will be associated with lower self-esteem and lower mood.

2) Lower levels of school, teacher, and peer connectedness will be associated with an increased risk of self-harm and suicidality.

3) Low self-esteem and low mood will be associated with an increased risk of

self-harm and suicidality.

Method

Design

This study will use a survey to collect data from participants, which will be

predominantly disseminated online, although participants are given the option to

request a paper copy of the survey. The survey will be purposefully made for the

current study, and will include relevant psychological measures in addition to collecting

demographic information (see measures section below).

Participants

Participants will be individuals between the ages of 13 and 16 who identify as

LGBT and who attend school in the UK. For their data to be included, participants will

be required to fulfil the inclusion criteria. Participants will be contacted via relevant

charities, youth groups, support groups, online forums, and social media.

Inclusion Criteria

Participants will be included in the research project if they:

- Are between 13 and 16 years old.

- Identify as being LGBT.

- Attend school in the UK.

- Provide informed consent to participate.

- Are able to access and complete the questionnaire.

Measures

Demographic measures. The study will record participant's age, gender

identity, sexual orientation, ethnicity and in which country they attend school.

Age. Participants will be asked to select their age from options of 13, 14, 15, and 16 years old.

Gender identity. Gender identity will be measured by asking the following two questions adapted from the Equality and Human Rights Commission (2012):

Q1) 'How would you describe your birth assigned gender?', with options of 1) Male, 2) Female, 3) Intersex, 4) Prefer not to say.

Q2) 'Which of the following describes how you think of yourself?' 1) Male, 2) Female, 3) Intersex, 4) Gender fluid, 5) Non-binary, 6) Unsure, 7) Prefer not to say, 8) Other. The eighth option of 'other' will be open-ended to allow participants to report alternative options that are not provided.

Sexual orientation. Sexual orientation will be measured by expanding the options used in the UK Office for National Statistics (ONS; Haseldon & Joloza, 2009) measure, as recommended by McDermott (2010). Participants will be asked 'Which of the following options best describes how you think of yourself'. They will then be asked to select one of the following options: 1) Straight/Heterosexual, 2) Gay or Lesbian, 3) Bisexual, 4) Questioning, 5) Queer, 6) Pansexual, 7) Unsure, 8) Prefer not to say, 9) Other. The ninth option of 'other' will be open-ended to allow participants to report alternative options that are not provided.

Ethnicity. Ethnicity will be recorded using the country-specific ethnic group question recommended for use in England by the UK ONS (2015).

Country. The country in which participant's attend school will be recorded by asking them to choose from England, Northern Ireland, Scotland, and Wales.

Connectedness. School, peer, and teacher connectedness will be measured using the corresponding three subscales of the Social Questionnaire for Secondary Students (Department of Education, Employment and Training, 2000), which was

validated in Australia. The connectedness to school subscale (e.g., I look forward to

going to school) and the connectedness to peers subscale (e.g., I am accepted by others

at my school) consist of 4 items and the connectedness to teachers subscale (e.g., My

teachers understand my point of view) consists of 5 items. Responses are scored on a 5-

point scale, where 1 = strongly agree and 5 = strongly disagree. These three subscales

have been used in previous research on sexual minority youths in Australia (McLaren et

al., 2015), and good levels of internal consistency were found (school: .93, teacher: .94,

peer: .83).

Self-esteem. Self-esteem will be measured using the 10-item Rosenberg Self-

Esteem Scale (SES; Rosenberg, 1965), which was validated in the USA but is widely

used in the UK. It has been found to have strong internal reliability in samples of sexual

minority youths in the USA, with alpha scores of .86 and .88 (Rosario, Schrimshaw, &

Hunter, 2005; Russell, Ryan, Toomey, Diaz, & Sanchez, 2011).

Depression. Depression will be measured by the Center for Epidemiologic

Studies-Depression Scale, which has been found to be acceptable and reliable measure

of depression in adolescents and young adults in the USA (CES-D; Radloff, 1991). In

previous research with sexual minority youths, this has yielded an alpha score of .92 in

Australia (McLaren et al., 2015) and .94 in the USA (Russell et al., 2011), indicating

very good internal consistency.

Self-harm. Self-harm will be measured by asking participants the question

'Have you ever tried to harm yourself in some way?', and asking them to select either

'yes' or 'no'. This has been employed in previous research investigating self-harm in

LGBT youths in the UK (McDermot, Hughes, & Rawlings, 2016). If 'yes' is selected,

participants will be asked 'How many times have you tried to harm yourself in the last

6 months?', and then provided with five options; 1) Have not harmed in the last six months, 2) Once, 3) 2-10 times, 4) 11-20 times, and 5) More than 20 times.

Suicidality. Suicidality will be measured using the 4-item Suicide Behaviors Questionnaire-Revised (SBQ-R; Osman et al., 2001), which has been used as a risk measure of suicide to distinguish between individuals with suicide-related behaviour and non-suicidal controls. Osman et al. (2001) found that in a non-clinical sample of adolescents, a cutoff score of 7 maximised the sensitivity (83%) and specificity (96%) rates. It is also recommended as a brief screening instrument for suicidality for researchers and clinicians (Cotton, Peters, & Range, 2007). This will then be used to create two new dichotomous variables: Suicidal ideation (past 12 months) and suicide plan/attempt (lifetime).

Impact of being LGBT on answers. Participants will be asked 'When thinking about the questions asked on this page, what impact do you think being LGBT has had on these experiences?'. Responses will be scored on a 5-point scale, where 1 = very negative, 2 = somewhat negative, 3 = no impact, 4 = somewhat positive and 5 = very positive. This question will be asked four times throughout the survey, after the measures for connectedness, self-esteem, depression, and self-harm/suicidality.

Additional Information. Participants will be provided with an open-ended box and told 'This space gives you the opportunity to write any additional information related to your experiences, or any feedback on completing the survey.'

Procedure

Developing the questionnaire. An online survey will be developed using Qualtrics' online survey software, which will incorporate the measures detailed above. Participants will be required to read a detailed information sheet (see Appendix 4-A) and provide their informed consent prior to beginning the survey (see Appendix 4-B).

Following the completion of the survey, participants will be provided with full debriefing information (see Appendix 4-C).

Recruitment. Data will be collected using an online questionnaire, which will be advertised using a poster (see Appendix 4-D) and additional information. This will be disseminated via websites and email through charities, youth groups, support groups, online forums and social media, with a specific focus on those that target LGBT individuals, and/or young people, for example stonewall and British Youth Council. Emails will be sent to schools in the UK that have students between the ages of 13 and 16 years to ask if they could disseminate the information to their students, along with a poster (see Appendix 4-E). Any participants that meet the inclusion criteria will be welcome to take part in this study. I will inform participants that I will provide a paper copy of the survey for those who would prefer to complete it on paper.

Data collection. Data will be extrapolated from Qualtrics' survey software and entered into SPSS (v. 23.0) to be stored and analysed.

Data Analysis

Descriptive statistics and associations with connectedness scores will be examined using crosstabs and correlations. Three logistic regression models will be conducted with self-harm, suicidal ideation, and suicide plan/attempt as the dependant variables. Independent variables will be school connectedness, peer connectedness, teacher connectedness, depression, and self-esteem, controlling for any necessary demographic variables. Based on previous research on self-harm and suicidality (McDermott et al., 2016; Youth chances, 2014), for binary logistic regression models with five independent variables, the desired sample size is 114 (Peduzzi et al., 1996).

Practical Issues

Expenses

Participants will not be offered a financial incentive or reward for taking part in this study. The only potential cost anticipated at this time is if participants request a paper copy of the survey, which will be sent with a stamped addressed envelope for return.

Data Management Plan

Qualtrics offers the "highest levels of data security" (Qualtrics, 2017) and the survey data is password protected, whereby only the principal researcher will have access. Data will then be input into SPSS and held on Lancaster University's encrypted server on the Principal Researcher's personal drive partition. Backups are automated and taken regularly. If data is accessed off-site, it will be done using Lancaster University's Virtual Private Network (VPN) or by using an encrypted memory stick belonging to the Principal Investigator. In the latter case, data will not be saved on personal computers but saved back onto the encrypted memory stick. The principal researcher will have ownership of all of the data until completion of the doctorate programme, at which point ownership will be handed over to the programme research director. Data will be stored for up to 10 years after completion of the study before being deleted. No information will be used in future research.

<div align="center">

Ethical Considerations

</div>

Informed Consent

An information sheet will be provided via the Lancaster University website. This will include a link at the bottom to the questionnaires on qualtrics. Prior to completing the questionnaires, participants are asked to inform the researcher if they have read and understood all of the information, and if they give their consent to take part in the study, by selecting 'yes' or 'no'. If the answer to these is 'no', participants will not be given access to the questionnaires. They will be provided with the principal

researcher's email address to allow them the opportunity to ask for further information.

Although participants will be aged between 13 and 16 years old, parental consent to

take part in this study will not be requested. This is because many young people have

not disclosed their sexuality to others, and may be at an increased risk of harm if they

do so, or if confidentiality is not maintained. Mustanski (2011) found that requiring

parental consent for LGBT youth under age 18 would likely alter study result and

increase participants' appraisals of the risks and discomforts associated with research

participation. In line with the ethical principle of autonomy, we want to give all

potential participants an equal opportunity to participate in this research, especially

when considering that this is a minority group often overlooked in research. This also

respects children's rights to make decisions regarding their own lives, including free

will to decide about participation in research, which is in line with the ethical principle

of justice. Research in this area has been conducted with young people a number of

times without parental consent, with no known negative implications (D'augelli, et al.,

2001; McDermott et al., 2016; Mclaren et al., 2015)

Right to Withdraw

Participants will be informed that if they choose to take part, they can still

change their mind at any point up until completion of the survey; Once they have

completed the survey, it will not be possible for them to withdraw their answers

because we will not be able to identify them as theirs.

Confidentiality and Anonymity

Participants will not be asked to provide any identifiable information when

completing the questionnaire, therefore the research team will not have access to their

name, contact details, or their location unless this is explicitly shared when given the

opportunity to provide additional information. In the event of this happening, or of a

participant contacting the research team directly, anonymity and confidentility will still

be maintained, unless a participant discloses that themselves or another person is at risk

of harm. In this case, this information may be passed on to the relevant service.

Participants are made aware of this potential breach of confidentiality in the

information sheet.

Reducing Potential Risks

To reduce the potential risk of participants becoming distressed from the content

of the questionnaires, I have used validated questionnaires in this study that have been

used in previous studies. I attempted to limit the number of questions regarding self-

harm and suicidality. Although other studies have asked for functions and methods of

self-harm, this was unnecessary for this study, and it may increase the likelihood of the

participant becoming distressed. Participants are made aware of the nature of the

questionnaires prior to giving consent and commencing the survey. Participants are

informed that they do not have to complete the questionnaires, and in the event that

they become distressed, they are encouraged to stop and contact one of the support

services that will be provided. Contact details for Childline, Samaritans, and Stonewall

are provided in the information sheet, and again when completing the questionnaires.

All participants will be provided with debriefing information following their

participation in the study.

<div align="center">Timescale</div>

Submit ethics proposal: June 2017

Data collection: September - December 2017

Data analysis: December 2017 - January 2018

Submit first draft of literature review: October/November 2017

Submit first draft of introduction and methods: November 2017

Submit second draft of literature review: December 2017

Submit first draft of results and discussion: February 2018

Submit first draft of critical review: February 2018

Submit second draft of research paper: March 2018

Submit second draft of critical review: March 2018

Submit thesis: May 2017

Submit papers for publication: July – August 2018

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Appendix 4-A

Participant Information Sheet

Feeling connected at school and the mental health of LGBT youths.

My name is Phaedra Robinson and I am doing this research as part of my training to become a clinical psychologist at Lancaster University, Lancaster, United Kingdom.

What is the purpose of the study?

We are asking young people who think of themselves as lesbian, gay, bisexual, queer, questioning, trans, or unsure to complete a short survey. We will ask questions about their school experiences, mental wellbeing, and their experiences of self-harm and/or suicidality.

We want to find out if feeling connected to school, teachers, and peers can:
- Improve self-esteem and mood.
- Reduce the likelihood of self-harm and suicidality of LGBT young people.

We hope that this will help to identify and promote school factors that may improve mental health for LGBT young people.

Can I take part?

We would like to invite you to take part if you:
- Are between 13 and 16 years old.
- Think of yourself as lesbian, gay, bisexual, queer, questioning, trans, or unsure (you do not need to have told anyone else about this).
- Attend school in the UK.

Do I have to take part?

No, it's completely up to you if you take part. If you do choose to take part, you can still change your mind at any point up until you finish the survey. Once you have completed the survey, it will not be possible for us to take out your answers because they will be anonymous and so we will not know which are yours.

What will happen if I decide to take part?

At the beginning of the survey, we will ask you to give your consent to take part and to complete some information about yourself. We will then ask you to complete questionnaires about school, your self-esteem and mood, and some further questions on your experience of self-harm and suicidality. All your answers will be anonymous, and it should take around 10 minutes to complete.

How do I take part?

You can complete the survey by clicking on the link at the bottom of this page.

If you would rather have a paper copy of the study, please contact the principal researcher, Phaedra Robinson, on **p.robinson@lancaster.ac.uk** and provide an address. A copy of the study materials will be sent to you along with a stamped addressed envelope for you to return the materials once they are completed.

Will my data be confidential?

All of your responses will be completely anonymised, meaning that nobody will have access to any personal information that identifies you. If you provide information about yourself that tells the researcher who you are, and tell them something that raises concerns of safety, this information may be shared with someone who can help to ensure that everyone is kept safe. This may involve forwarding your details to health or emergency services. Where possible and safe to do so, you will be told of the decision to pass on the information.

The responses will be stored on a password protected, secure platform and Lancaster University will store the electronic survey data securely for up to 10 years. We will input the answers from paper surveys onto our electronic survey software and destroy the paper copies immediately.

What will happen to my data?

Everyone's responses will be added together and analysed. The results will be written up and submitted as part of a thesis within the Lancaster Doctorate in Clinical Psychology programme. Once the study has been reviewed, a summary report may be sent to the organisations that advertised the study and asked for a copy. We also hope that the findings will be written up into a brief paper and published in an academic journal. If published, the paper will be listed on the principal researcher's ResearchGate page where you will be able to request a copy. Again, no participants will be identifiable in the research.

Are there any risks of taking part?

There should not be any risks in taking part in this study. If you feel any distress during or after completing the questionnaires, please stop and contact someone for support. Useful organisations are listed below and can also be found at the end of the survey.

Sources of support

Childline:
Tel: 0800 1111 (Freephone)
Or contact them online for a 1 to 1 chat with a counsellor.

Samaritans:
Tel: 116 113 (Freephone)
Email: jo@samaritans.org

Stonewall:
Tel: 08000 502020

Are there are benefits?

Although we cannot guarantee any direct benefits of taking part, we hope that you will find your participation interesting and worthwhile, and it may help you to think about your experiences. You will also be helping to inform our understanding of how school factors may help to improve the mental health of LGBT young people.

Who has reviewed the project?

This study has been reviewed and approved by the Faculty of Health and Medicine Research Ethics Committee at Lancaster University.

Where can I obtain further information about the study if I need it?

If you have any questions about the study please contact the principal researcher:

Phaedra Robinson - Trainee Clinical Psychologist
Email: p.robinson@lancaster.ac.uk
Address: Division of Health Research
Faculty of Health and Medicine
Furness College, Lancaster University
Lancaster, LA1 4YG, UK

Complaints

If you wish to make a complaint or raise concerns about any aspect of this study and do not want to speak to the researcher, you can contact:

Pete Greasley – Teaching Fellow
Email: p.greasley@lancaster.ac.uk
Telephone: 01524 593535
Address: Division of Health Research
Faculty of Health and Medicine
Furness College, Lancaster University
Lancaster, LA1 4YG, UK

If you wish to speak to someone outside of the Clinical Psychology Doctorate Programme, you may also contact:

Professor Roger Pickup - Associate Dean for Research
Email: r.pickup@lancaster.ac.uk
Telephone: 01524 593746
Address: Division of Biomedical and Life Science
Faculty of Health and Medicine, Lancaster University
Lancaster, LA1 4YG, UK

Thank you for taking the time to read this information sheet.
If you would like to take part, please click on the link below to provide consent and take the survey:

XXXXXXXXXX

Appendix 4-B

Information and Consent Form on Qualtrics

Feeling connected at school and the mental health of LGBT youths.

We are asking if you would like to take part in a research project which aims to get a better understanding of the relationship between school factors and the mental health of LGBT youths.

Before you consent to taking part in the study please read the information provided. If you have any questions before taking part please speak to the principal researcher, Phaedra Robinson at p.robinson@lancaster.ac.uk.

Could you please read the following statements and click on the option below if you are happy to take part in the study.

1. I have read the participant information and fully understand what is expected of me in this study.

2. I have been given the contact details of the research team and have had the opportunity to ask any questions and to have them answered.

3. I understand that I do not have to take part and that I am free to stop at any time, for any reason.

4. I understand that once I have completed the study, my responses will be anonymised and it will not be possible to remove my responses.

5. I understand that my responses will be added to other participants' responses, anonymised and may be published.

6. I understand that the study will not ask for any personal or identifiable information and if I do share my details with the research team, it will remain confidential. **However**, I know that if I tell the research team who I am and share any information that suggests there may be a risk of harm to myself or others, the research team may need to share this information with someone who can provide me with direct support, for example, the emergency services.

7. I consent to Lancaster University keeping the anonymised data from the study for 10 years after the study has finished.

○ **I agree with all of the above statements and consent to taking part in this study**

Appendix 4-C

Debrief Information

Feeling connected at school and the mental health of LGBT youths.

Thank you for taking part in this study. The aim of the study is to explore factors associated with self-harm and suicidality in LGBT youths. These factors include feeling connected to school, teachers, and peers, self-esteem, and depression. By gaining a better understanding of the relationship between these school-based factors and mental health in LGBT youths, it may be possible to develop more effective interventions.

We think that individuals who feel more connected to their school, teachers, and peers will have higher self-esteem and higher overall mood, and be less likely to engage in self-harming behaviour and suicidality.

All the data that is collected will be entered into a secure database before being analysed. The findings will be submitted as part of a thesis for the Lancaster Doctorate in Clinical Psychology programme. A summary report will be sent to any organisation that advertised the study and asked for a copy of the findings. The findings will also be written up into a brief paper and may be published. These will all be completely anonymised, so nobody will be able to identify you.

Taking part in this study involved being asked questions of a difficult nature. If you are feeling distressed after taking part in this study, please contact one of the organisations below. You may also wish to visit your GP to access more formal support.

Thank you again for your participation.

Sources of support

Childline:
Tel: 0800 1111 (Freephone)
Or contact them online for a 1 to 1 chat with a counsellor.

Samaritans:
Tel: 116 113 (Freephone)
Email: jo@samaritans.org

Stonewall:
Tel: 08000 502020

Appendix 4-D

Recruitment Poster

Inviting LGBT youths to complete a survey about their experiences. For more
information and to take part, follow this link: [link to information sheet]
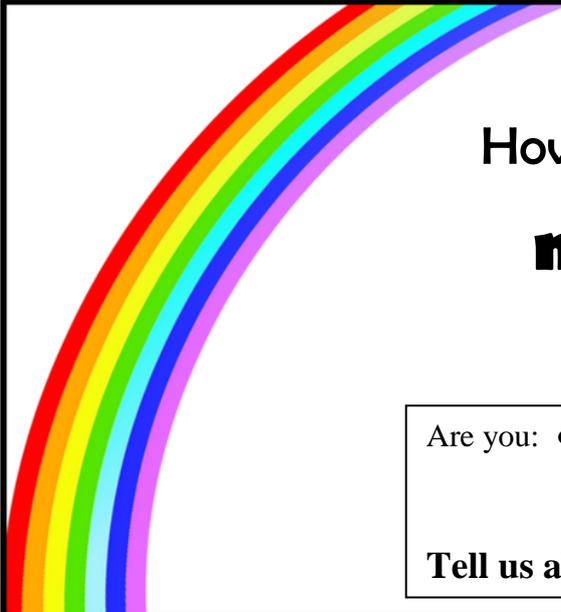
How does **school** affect the

mental health of

LGBT youths?

Are you: ● 13 to 16 years old?
          ● LGBT?
          ● At school in the UK?
Tell us about your experiences!

Appendix 4-E

Full Recruitment Poster
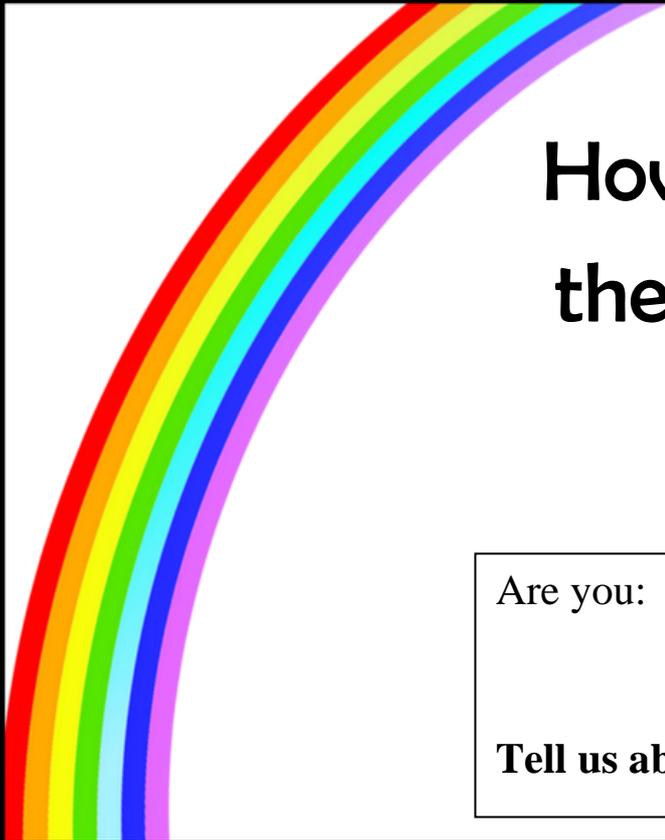
Inviting LGBT youths to complete a survey about their experiences.

How does **school** affect the **mental health** of **LGBT youths**?

Are you: ● 13 to 16 years old?
          ● LGBT?
          ● At school in the UK?
Tell us about your experiences!

For more information and to take part, you can:

Scan the QR code to access the survey

Access it through my twitter page:

@phaedra_123

Or you can follow this link:

http://www.lancaster.ac.uk/dclinpsy/research/phaedrarobinson/

Appendix 4-F

Measures Used

Three connectedness subscales of the Social Questionnaire for Secondary Students

(Department of Education, Employment and Training, 2000).

Responses are scored on a 5-point scale, where 1 = strongly agree and 5 = strongly disagree.

School Connectedness

1. I look forward to going to school.
2. I like school.
3. I enjoy the work I do at school.
4. Learning in my school is fun.

Teacher Connectedness

1. My teachers acknowledge me when I do well.
2. I like my teachers this year.
3. My teachers listen to what I have to say.
4. My teachers understand my point of view.
5. At this school there is a teacher who cares about me.

Peer Connectedness

1. I don't feel lost at this school.
2. I am usually not deliberately left out of things.
3. I am accepted by others at my school.
4. I get on well with others at my school.

Suicide Behaviors Questionnaire-Revised

1. Have you ever thought about or attempted to kill yourself? (check one only)
    1. Never
    2. It was just a brief passing thought
    3a. I have had a plan at least once to kill myself but did not try to do it
    3b. I have had a plan at least once to kill myself and really wanted to die
    4a. I have attempted to kill myself, but did not hope to die
    4b. I have attempted to kill myself, and really hoped to die

2. How often have you thought about killing yourself in the past year? (check one only)
    1. Never
    2. Rarely (1 time)
    3. Sometimes (2 times)
    4. Often (3-4 times)
    5. Very Often (5 or more times)

3.Have you ever told someone that you were going to commit suicide, or that you might do it? (check one only)
    1. No
    2a. Yes, at one time, but did not really want to die
    2b. Yes, at one time, and really wanted to die
    3a. Yes, more than once, but did not want to do it
    3b. Yes, more than once, and really wanted to do it

4. How likely is it that you will attempt suicide someday? (check one only)
    0. Never
    1. No chance at all
    2. Rather unlikely
    3. Unlikely
    4. Likely
    5. Rather likely
    6. Very likely

Centre of Epidemiologic Studies-Depression Scale (CES-D; Radloff, 1991).

Instructions: Below is a list of some of the ways you may have felt or behaved. Please indicate how often you have felt this way during the past week by checking the appropriate space.

During the past week	Rarely or none of the time (less than 1 day)	Some or a little of the time (1–2 days)	Occasionally or a moderate amount of the time (3–4 days)	Most or all of the time (5–7 days)
1. I was bothered by things that usually don't bother me.	0	1	2	3
2. I did not feel like eating; my appetite was poor.	0	1	2	3
3. I felt that I could not shake off the blues even with help from my family or friends.	0	1	2	3
4. I felt that I was just as good as other people.	3	2	1	0
5. I had trouble keeping my mind on what I was doing.	0	1	2	3
6. I felt depressed.	0	1	2	3
7. I felt that everything I did was an effort.	0	1	2	3
8. I felt hopeful about the future.	3	2	1	0
9. I thought my life had been a failure.	0	1	2	3

During the past week	Rarely or none of the time (less than 1 day)	Some or a little of the time (1–2 days)	Occasionally or a moderate amount of the time (3–4 days)	Most or all of the time (5–7 days)
10. I felt fearful.	0	1	2	3
11. My sleep was restless.	0	1	2	3
12. I was happy.	3	2	1	0
13. I talked less than usual.	0	1	2	3
14. I felt lonely.	0	1	2	3
15. People were unfriendly.	0	1	2	3
16. I enjoyed life.	3	2	1	0
17. I had crying spells.	0	1	2	3
18. I felt sad.	0	1	2	3
19. I felt that people disliked me.	0	1	2	3
20. I could not get "going."	0	1	2	3
Total Score:				

Rosenberg Self-Esteem Scale (SES; Rosenberg, 1965)

The scale is a ten item Likert scale with items answered on a four point scale - from strongly agree to strongly disagree. The original sample for which the scale was developed consisted of 5,024 High School Juniors and Seniors from 10 randomly selected schools in New York State. Instructions: Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle SA. If you agree with the statement, circle A. If you disagree, circle D. If you strongly disagree, circle SD.

1. On the whole, I am satisfied with myself.
2.* At times, I think I am no good at all.
3. I feel that I have a number of good qualities.
4. I am able to do things as well as most other people.
5.* I feel I do not have much to be proud of.
6.* I certainly feel useless at times.
7. I feel that I'm a person of worth, at least on an equal plane with others.
8.* I wish I could have more respect for myself.
9.* All in all, I am inclined to feel that I am a failure.
10. I take a positive attitude toward myself.

Scoring: SA=3, A=2, D=1, SD=0. Items with an asterisk are reverse scored, that is, SA=0, A=1, D=2, SD=3. Sum the scores for the 10 items. The higher the score, the higher the self-esteem.