The mediating role of emotion regulation on self-harm among gender identity and sexual orientation minority (LGBTQ+) individuals.

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Abstract

Objective. The present study was conducted to (1) investigate the role of emotion regulation difficulties among self-harming Lesbian, Gay, Bisexual, Transgender, Queer or Questioning (LGBTQ+) individuals and (2) to test for a mediating role of emotion regulation difficulties in self-harm among LGBTQ+ individuals.

Method. This study investigated the relationship between LGBTQ+ status, self-reported levels of emotion regulation difficulties and self-harm in a community sample (N=484, aged 16-63), using an online cross-sectional survey.

Results. LGBTQ+ individuals reported more emotion regulation difficulties and were almost 7 times more likely to self-harm than non-LGBTQ+ participants. Being an LGBTQ+ participant was associated with greater self-harm frequency, when controlling for age, income and difficulties in emotion regulation. Emotion regulation difficulties mediated the association between LGBTQ+ status and both self-harm status and frequency.

Conclusions. The present findings suggest that treating emotion regulation difficulties might reduce both the prevalence and lifetime frequency of self-harm episodes among gender identity and sexual orientation minority individuals. Targeting emotion regulation might be used as an early prevention strategy among LGBTQ+ individuals who are at risk for self-harm. Further, enhancing emotion regulation skills among self-harming LGBTQ+ individuals might replace maladaptive emotion regulation strategies with healthy alternatives, and can, therefore, foster resilience.

Keywords: LGBTQ+, Emotion Regulation, Self-harm, NSSI, Gender, Sexuality

Highlights

- LGBTQ+ individuals are at a high risk for self-harm.
- ER mediated the association between LGBTQ+ status and self-harm
- Targeting emotion regulation in LGBTQ+ people may help reduce self-harm

The mediating role of emotion regulation on self-harm among gender identity and sexual orientation minority (LGBTQ+) individuals.

Introduction

Self-harm, defined as self-injury or self-poisoning regardless of the intent of the act (National Collaborating Centre for Mental Health, 2011) is very common in young people, especially young females, in both community and clinical samples (Geulayov et al., 2017). Self-harm is strongly linked to death by suicide (Hawton et al., 2012; 2020). The incidence of suicide among individuals who self-harm has reached 30 times higher than that of the general population (Hawton et al., 2020). This is noteworthy, as suicide is the second most common cause of mortality in young people globally (Mokdad et al., 2016), and the leading cause of death among young individuals in the UK (Bould et al., 2019).

Self-harm, as conceptualised by the Experiential Avoidance Model (EAM; Chapman et al., 2006) constitutes a maladaptive strategy that serves to regulate, manage or escape from unpleasant emotions; hence, self-harm is a consequence of emotional avoidance. According to the EAM, self-harm is negatively reinforced; it provides a short-term relief from an aversive emotional response, and consequently, it becomes the prepotent response to stressors. Over time, individuals who self-harm are trapped within this reinforced cycle of engaging in this behaviour to avoid or escape from emotional distress. (Chapman et al., 2006).

Furthermore, the incidence of self-harm and suicidal behaviour in gender and sexual minorities (lesbian, gay, bisexual, transgender, queer and others; LGBTQ+) is high (Batejan et al., 2015; Jackman et al., 2016; O'Brien et al., 2017). A recent meta-analytic review reported particularly high prevalence of non-suicidal self-injury (NSSI), among transgender (47%) and bisexual individuals (42%; Liu et al., 2019). These

researchers further found that there was a higher prevalence of NSSI in sexual orientation (30%) and gender identity (47%) minority individuals, compared to cisgender and/or heterosexual individuals (15%).

The high prevalence of self-harm and suicidality in LGBTQ+ populations has been explained using the Minority Stress Model (Meyer, 1995; 2003; 2015). This posits that LGBTQ+ individuals are exposed to unique risk factors, which raise the risk for mental health difficulties among these populations, including suicidal behaviour. These minority stressors include internalised homophobia and or transphobia, whereby individuals internalise a negative attitude toward the self, stigma, which relates to expectations of discrimination and rejection, and actual experiences of discrimination and violence (Hendricks & Testa, 2012). These stressors, are minority-specific, and thus, lie over and above general life stressors and metal health difficulties observed in cisgender and/or heterosexual individuals. Furthermore, while the Minority Stress Model highlights the protective nature of group-level coping, Meyer (2015) recognises the importance of individual-based resilience and coping processes as well. This is especially relevant to self-harm, as coping and regulating emotional states comprise one of the most frequently observed function of this behaviour (e.g., Klonsky, 2011).

Emotion regulation and self-harm

Emotion regulation is a complex construct, with numerous definitions and conceptualisations (Gross, 2015). The present study embraces the conceptualisation of Gratz & Roemer (2004), whereby emotion regulation comprises the ability to flexibly employ emotion regulation strategies to modulate - rather than eliminate- emotional experiences and act in a goal-directed behaviour. Thus, emotion regulation consists of four facets, namely 1) the understanding and awareness of emotions, 2) emotional acceptance, 3) the capacity to inhibit impulsive behaviours and engage in goal-directed

actions when in distress, and 4) the ability to flexibly employ emotion regulation strategies to modify emotional experiences in order to achieve specific outcomes (Gratz & Roemer, 2004).

Both qualitative (Horne & Csipke, 2009) and quantitative (Nock & Prinstein, 2004; Wolff et al., 2019) analyses support that emotion regulation is a key function of NSSI. For example, in their four-factor model of NSSI, Nock and Prinstein (2004) suggest that emotion regulation is among the primary purpose underlying most adolescent NSSI episodes. Despite the large body of evidence demonstrating a strong association between emotion regulation difficulties and self-harm (see Wolff et al., 2019) and the high prevalence of self-harm among LGBTQ+ individuals (Robinson et al., 2019; Strauss, 2020) there is a dearth of studies investigating the role of emotion regulation among self-harming LGBTQ+ populations (Fraser et al., 2018). A study of transgender and gender non-conforming individuals reported that rumination about gender identity, which constitutes a maladaptive emotion regulation strategy, mediated the association between transgender congruence and self-esteem (van den Brink et al., 2019), a variable which has been repeatedly associated with self-harm (Forrester et al., 2017). Furthermore, LGB populations seem to experience more difficulties in emotion regulation compared to their heterosexual peers (Matthews, et al., 2002; Hatzenbuehler et al., 2008).

Additionally, a longitudinal study found that emotion regulation deficits (rumination and poor emotional awareness), mediated the relationship between sexual orientation minority status and symptoms of anxiety and depression (Hatzenbuehler et al., 2008). Therefore, Hatzenbuehler (2009) formulated the Psychological Mediation Framework, which posits that stigma leads to increased amount of stress to LGB individuals, which increases difficulties in emotion regulation, which, in turn, mediate the relationship between stigma-related stress and mental health difficulties. Within the context of self-harm, longitudinal data in adolescents support the assumptions of the model (Robinson et al., 2019), whereas for LGBT adolescents there is preliminary support from cross-sectional data (Fraser et al., 2018). These researchers reported that

emotion regulation mediated the relationship between sexual orientation and NSSI among adolescents aged 13-18 years, suggesting that NSSI among LGBTQ+ adolescents is, at least partly, due to emotion regulation deficits. However, future longitudinal studies are needed to elucidate whether emotion regulation prospectively mediates associations between LGBTQ+ group membership and self-harm, as cross-sectional estimates of mediation models may be biased (see Cole & Maxwell, 2003; Maxwell & Cole, 2007). Further, there is still a paucity of research exploring the role of emotion regulation difficulties among LGBTQ+ individuals. Despite this preliminary evidence supporting a mediating effect of emotion regulation difficulties in relation to self-harm status within LGB adolescents, whether the model applies (a) to the frequency of self-harm and (b) to a wider LGBTQ+ sample beyond adolescence remains empirically unexplored.

Current Study

The present study aims to contribute to the limited literature on the relationship between emotion regulation difficulties and self-harm among LGBTQ+ individuals. It is anticipated that, because of higher stigma-related stress, LGBTQ+ individuals will show higher emotion regulation difficulties compared to cisgender and/or heterosexual individuals. Moreover, self-harm is expected to be more prevalent among LGBTQ+ participants, who are also expected to have higher self-harm frequencies compared to cisgender and or heterosexual individuals. Further, emotion regulation difficulties are expected to mediate the relationship between LGBTQ+ status and (1) self-harm status and (2) self-harm frequency, based on the Psychological Mediation Framework (Hatzenbuehler, 2009).

Materials and Methods

Participants

Convenience sampling was employed with the aim of recruiting as many participants as possible between December 2016 and March 2017 inclusive. We recruited 484 participants, whose age ranged between 16 - 63 years (*M*=24.15, *SD* =8.49). The final sample of self-harming individuals (discussed below) was similar to previous studies assessing mediation effects (e.g., O'Connor et al., 2007). Most participants (88%) were White, 3% were Asian, 1% African American, 5% racially mixed and 3% ‘other’ race, including Latin and Hispanic. There were 76% females and 22% males, whereas eight participants (2%) indicated ‘prefer not to answer’. The most prevalent sexual orientation was heterosexual (64%).

Gender identity and sexual orientation minorities: There were 172 (36%) LGBTQ+ participants, whose age ranged between 16-53 (Mdn= 22, *IQR*= 19-26). Among these, 3% were lesbian, 3% gay, 20% bisexual, 3% asexual, 2% pansexual, 2% transgender, and 6% queer or questioning. Six (1%) participants identified with non-binary gender, one with gender queer, and one was gender questioning. There were 25 (15%) participants who identified with more than one LGBTQ+ group.

Design and Procedure

The present study is part of a larger study that investigated the relationship between mindfulness, emotion regulation and self-harm, which employed an online community-based survey, using self-report questionnaires. Participants were recruited via the University of Nottingham, and through social media platforms (e.g., Facebook, Twitter etc.). The larger study has received ethical approval from the School of Psychology Research Ethics Committee at the University of Nottingham [Ref.# 914].

Only individuals aged 16 years and above were eligible to participate, in accordance with the ethical guidelines. All participants provided digital informed consent.

Measures

Demographic Variables. Age, gender, LGBTQ+ status, and income data were collected. Demographic Variables. Participants entered a numeric value to indicate their age. For annual income, participants could choose from "£10,000-14,999", "£15,000-19,999","£20,000-29,999", "£30,000-49,999", "£50,000+" and "Prefer not to answer". For gender, participants were given the following options: "Male", "Female" and "Other", where they could free-report other gender identities. To assess LGBTQ+ status, participants were asked: "Which of the following do you identify as?", and were given the following options: "Heterosexual", "Gay", "Lesbian", "Bisexual", "Queer or Questioning" and "Other" where they could free-report other sexual orientations. For this question, participants could also indicate whether they identified as "Transgender". Participants could select more than one option from this question (e.g., Lesbian and Transgender). From these questions, a binary "LGBTQ+ status" variable was created, indicating whether participants identified with a gender identity and/or a sexual orientation minority or not.

Emotion Regulation. The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a 36-item, self-report questionnaire that investigates emotion regulation in response to stressful situations.

The DERS contains six facets of emotion regulation difficulties, including: lack of awareness of emotional responses (‘Awareness’), lack of clarity of emotional responses (‘Clarity’), non-acceptance of emotional responses (‘Non-acceptance’), deficits in employing emotion regulation strategies when feeling unwelcome emotional states (‘Strategies’), difficulties in managing impulsive behaviours when experiencing

distress (‘Impulse’’) and inability to employ goal-directed behaviour when experiencing unwelcome emotions (‘Goals’).

In the current study, internal consistency for the DERS was excellent (α=0.96) and good for each of the subscales (Awareness, α = .83; Clarity, α = .88; Non-acceptance, α = .93; Goals, α = .89; Impulse, α = .93; Strategies α=.92).

Self-harm. The Inventory of Statements about Self-Injury (ISAS; Klonsky & Olino, 2008; Klonsky & Glenn, 2009) was used to ask participants whether they have ‘ever engaged in any form of self-harm behaviour intentionally (i.e. on purpose)’ with the omission of the phrase ‘and without suicidal intent’. This was based on the research evidence supporting that suicidal intent in self-harm constitutes a continuous typology (Orlando et al., 2015). To assess the lifetime frequency of self-harm, the first section of the ISAS was used, which measures the lifetime number of episodes of 12 behaviours (i.e., cutting, biting, burning, carving, pinching, swallowing dangerous substances, pulling hair, severe scratching, banging/hitting self, wound picking, rubbing skin against rough surfaces and sticking needles). Participants could also free report ‘other’ behaviours. Self-poisoning was captured using the "swallowing dangerous substances" and the "other" categories.

Data Analysis

Data analysis was completed using SPSS 23 and Stata 15 for Windows. Listwise deletion was used to deal with missing data, which were missing at random. Further, data were excluded for participants who did not indicate numeric values for their lifetime self-harm frequency. Therefore, 270 participants were included in the analyses of self-harm frequency.

Mann-Whitney U test was used to assess differences in emotion regulation difficulties across LGBTQ+ individuals with the rest of the sample. A chi-squared test was used to

assess whether LGBTQ+ status was associated with a lifetime history of self-harm Generalised negative binomial regression models, which account for overdispersed count data, were computed to assess the relationship between LGBTQ+ status and self-harm frequency. In the multiple negative binomial regression, age and income were controlled for, given the evidence demonstrating their associations with self-harm (Liu et al., 2019; Rehman, Lopez & Jaspar, 2020).

Further, two simple mediation models, as described in Baron and Kenny (1986), were tested to investigate whether difficulties in emotion regulation mediate the association between LGBTQ+ status and self-harm status and frequency. These were run in Stata's structural equation modelling builder, which enables the inclusion of binary and count variables. The indirect effect was assessed using the Sobel test (Preacher & Leonardelli, 2001), which assesses the reduction of the effect of the independent variable when including the mediator in the model. Since evidence has demonstrated that cross-sectional estimates of longitudinal mediation effects may be biased (see Cole & Maxwell, 2003; Maxwell & Cole, 2007), the present study used a cross-sectional mediation model as a preliminary step in assessing the indirect effects of emotion regulation on self-harm within the LGBTQ+ community.

Results

Preliminary Analyses

There were 325 participants (67%) with a lifetime history of self-harm. Self-harm frequency was high among the sample; 25% of participants reported 1-79 episodes, 50% indicated up to 300 episodes (median) and 75% up to 1082 self-harm episodes. Almost half of the participants with a lifetime history of self-harm (41.9%) reported more than 500 episodes and more than a quarter (27%) reported 1000 episodes or more. Two participants reported extremely high frequencies (i.e., 100,000,000). In

line with the study reported by Nielsen et al., (2016), lifetime frequency for these participants was capped at 50,000 episodes. The most common method of self-harm was self-cutting (see supplemental material).

The zero-order correlations between LGBTQ+ status, demographic variables, difficulties in emotion regulation, self-harm frequency are shown in table 1. Being LGBTQ+ was associated with more difficulties in emotion regulation and with a higher self-harm frequency.

[Table 1 about here]

Do LGBTQ+ individuals have more difficulties in emotion regulation than heterosexual and/or cisgender individuals?

LGBTQ+ individuals reported more difficulties in emotion regulation (mean rank=284.69) than heterosexual and/or cisgender individuals (mean rank = 219.24; U =19576, p=.000).

Is LGBTQ+ status associated with a lifetime history of self-harm?

LGBTQ+ status was associated with self-harm status ($X^2(1)=60.62$, p=.0000). LGBTQ+ individuals were almost 7 times as likely to have ever self-harmed, compared to non-LGBTQ+ individuals (O.R = 6.81, 95% C.I= 3.98-11.64).

Is LGBTQ+ status associated with self-harm frequency?

A univariate generalised negative binomial regression showed that LGBTQ+ status was associated with higher self-harm frequency (IRR=1.98, S.E=.378, Z=3.58, $p<.001$, 95% C.I: .1.362-2.88). The incidence rate for self-harm episodes was 1.98 times higher in LGBTQ+ individuals; that is, there is a 98% higher rate of self-harm frequency compared to heterosexual and/or cisgender individuals. In a multivariate negative binomial regression, this association remained significant when controlling for difficulties in emotion regulation, age and income, which were also associated with self-harm frequency (see table 2). Being LGBTQ+, having more difficulties in emotion regulation, older age and lower income were associated with a higher frequency of self-harm.

[Table 2 about here]

Does emotion regulation mediate the association between LGBTQ+ status and self-harm status and lifetime frequency of self-harm episodes?

The association between LGBTQ+ status and self-harm status was mediated by emotion regulation difficulties (see figure 1). Further, Difficulties in emotion regulation mediated the association between LGBTQ+ status and self-harm frequency (see figure 2).

[Figure 1 about here]

[Figure 2 here]

Discussion

The present study investigated the relationship between gender identity and sexual orientation minority status, difficulties in emotion regulation and self-harm status and lifetime frequency of self-harm episodes. Compared to cisgender and/or heterosexual individuals, LGBTQ+ participants reported more difficulties in emotion regulation, a higher prevalence and frequency of self-harm. Moreover, difficulties in emotion regulation partially, atemporally mediated the associations between LGBTQ+ status and self-harm status and frequency. These cross-sectional findings constitute preliminary support for a potential mediation role of emotion regulation in the higher prevalence and lifetime frequency of self-harm within LGBTQ+ individual, that can be tested using longitudinal studies.

Theoretically, these findings relate to and may be interpreted using the Minority Stress Model (Meyer, 1995; 2003; 2015) and the Psychological Mediation Framework (Hatzenbuehler, 2009). A possible explanation for the higher levels of emotion regulation difficulties among the LGBTQ+ participants may relate to the elevated stress levels that LGBTQ+ individuals experience compared to cisgender and/or heterosexual individuals. These increased stress levels can be attributed to minority-specific stressors that LGBTQ+ individuals may experience, which exist over-and-above mental health difficulties observed in the general population (Meyer, 1995). These stressors can lead to more difficulties in regulating the intensity of emotion, which can, in turn, lead to maladaptive emotion regulation strategies, including self-harm (Hatzenbuehler, 2009). This can explain the atemporal mediation effect of emotion regulation difficulties on the association between LGBTQ+ status and self-harm status and frequency in the present study. Hence, the present findings are in line with the Minority Stress Model and the Psychological Mediation Framework.

Furthermore, the present findings are consistent with the results of Fraser et al. (2018), who reported a mediation effect of emotion regulation difficulties in the

association between sexual orientation and NSSI. While these researchers recruited LGB adolescents, the present study extends these findings to a wider population of both gender identity and sexual orientation minority individuals, with the age range spanning beyond adolescence. Moreover, in the present study, both self-harm status and lifetime frequency were used as outcome variables.

Clinically, the present findings suggest that LGBTQ+ individuals are at a higher risk of both a lifetime history of self-harm and higher frequencies of self-harm episodes. In the present study, LGBTQ+ individuals were approximately 7 times as likely to have ever self-harmed and had almost 100% higher lifetime frequency of self-harm compared to cisgender and/or heterosexual individuals. Further, the finding that emotion regulation difficulties partially mediated the association between LGBTQ+ status and self-harm status and frequency, may suggest that treating emotion regulation difficulties can reduce both the prevalence and frequency of self-harm LGBTQ+ individuals, though there is a need for longitudinal data to support these preliminary findings.

It is therefore possible that targeting emotion regulation difficulties may catalyse a shift from maladaptive regulatory processes to resilience. With enhanced emotion regulation skills, when LGBTQ+ individuals are faced with stressors they may be more likely to regulate their emotions in a healthy way, protecting them from engaging in self-harm. This may facilitate the prevention, reduction of and recovery from self-harm.

Nevertheless, the present findings also suggest that there might be other variables, that might explain the association between LGBTQ+ status and self-harm. First, the associations were not fully mediated by emotion regulation, and secondly, the association between LGBTQ+ status and self-harm frequency remained significant after controlling for age, income and emotion regulation difficulties. This suggests that, while these variables may also influence self-harm frequency, there are other risk and protective factors of self-harm among LGBTQ+ individuals, which are not accounted for in the present models. Potential candidates include variables related to Meyer's

(2015) concept of resilience. Meyer (2015), drawing from ecological systems theory (Ungar, 2011), distinguished between individual- and community-based resilience. While Meyer (2015) acknowledged the importance of both individual- and community-based resilience, he emphasised the role of community-based resilience in the context of gender identity and sexual orientation minority discrimination:

> *As we begin to focus on individual responses and resilience we risk a shift from interventions that attempt to correct the pathogenic social environment to interventions that focus on individuals so that they can become resilient in coping with the environment (p. 211).*

This highlights the necessity for intervening social policy at different levels, including the individual, family, the LGBTQ+ community and the wider national community. Recent evidence has supported the protective role of a supportive community against suicidality for marginalised individuals, including those of sexual orientation minority (Standley & Foster-Fishman, 2021).

At the individual level, the implications for policy makers offered in the present study are numerous. Promoting the emotion regulation capabilities and expanding the emotional repertoire of LGBTQ+ individuals regardless of the presence of self-harm may constitute a protective factor against the initiation of self-harm. Early prevention strategies in LGBTQ+ individuals who have never self-harmed include psychoeducation on emotional awareness, the benefits of emotional acceptance and the maladaptive nature of emotional avoidance, as well as practical emotion regulation skills and strategies, such us impulse control (Hayes et al., 2006; Linehan et al., 2006; Perez, 2012). Alternatively, emotion regulation difficulties, and its facets, such as access to emotion regulation strategies, might be used to screen for LGBTQ+ individuals who are at a higher risk for self-harm, and treat LGBTQ+ individuals who self-harm. This is based on findings demonstrating that only access to emotion regulation strategies substantially accounted for variations in NSSI when controlling for other emotion regulation subscales in a sample of adolescent inpatients (Perez et al.

2012), though the facets may vary across different populations. Thus, future studies may benefit from deconstructing emotion regulation difficulties and investigating the individual facets thereof, and their contribution to self-harm. Further, and given the strong associations between emotion regulation and self-harm (e.g., Nock & Prinstein, 2004), and the high prevalence of self-harm among LGBTQ+ individuals (Liu et al., 2019), self-harm studies may benefit from assessing individual facets of emotion regulation, along with measures of LGBTQ+ status, as correlates.

The present study is not without limitations. The primary limitation of the present study is its cross-sectional design, which precludes from making any causal inferences. Therefore, the atemporal mediation models cannot be inferred to be causal.. Thus, longitudinal studies investigating the potential mediation effect of emotion regulation on the association between LGBTQ+ and self-harm are needed to provide empirical support for a potential causal mechanism of this variable. A second limitation of the study is that the interpretations of the findings might not accurately represent the gender identity minority population, as they were heavily underrepresented compared to sexual orientation minority individuals. This highlights the need for future studies investigating the differential effects of each LGBTQ+ category in relation to the dynamic between emotion regulation and self-harm. A final limitation relates to the small sample size of the lifetime frequency of self-harm variable, which may limit the generalisability of the findings.

Conclusion

Notwithstanding these limitations, the present study adds to the limited literature on the role of emotion regulation in self-harm among LGBTQ+ individuals, and offers theoretical, clinical and policy implications. In conjunction with previous research, the present findings support that emotion regulation difficulties may comprise a mediating variable for change in the treatment of self-harm. Enhancing emotion regulation

strategies might be an effective early prevention strategy among LGBTQ+ individuals. Hence, the findings of the present study suggest that targeting emotion regulation capabilities, might help in the prevention, screening for and treatment of self-harm by catalyzing a shift from maladaptive emotion regulation to resilience. Given the cross-sectional design of the present study, the literature would particularly benefit from longitudinal research to support the mediating role of emotion regulation in self-harming LGBTQ+ individuals.

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A. Jess Williams is currently an ESRC-funded PhD student with the Institute for Mental Health, University of Birmingham and the Self-Harm Research Group, University of Nottingham. Her PhD focuses on understanding self-harm and suicide among LGBTQ+ young people, using mixed methods. Other research interests include; help-seeking behaviour, eating disorders, video gaming, public and patient involvement, and behaviour change.

Ellen Townsend is a Professor in the School of Psychology at the University of Nottingham and PI leading the Self-Harm Research Group (SHRG). The group researches psychological

factors associated with self-harm and suicidality, and interventions that promote recovery, especially in young people using a range of techniques including sequence analysis, the Card Sort Task for Self-Harm (CaTS), experiments, questionnaires, epidemiology, interviews and systematic reviews. This work has been funded by the NHS, NIHR and the ESRC. Her work has influenced policy - earlier versions of our systematic review of interventions for self-harm were included in the 2011 NICE Guidance on the Longer-Term Management of Self-Harm.

Data Availability Statement. Data available on request from the authors.

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TABLES

TABLE 1

TABLE 1. Spearman rho correlations between LGBTQ+ status, demographic variables, emotion regulation difficulties, and self-harm frequency. (N=484, except for correlations of Self-harm Frequency where N=270)

	Age	LGBTQ+	Income	DERS	Self-harm Frequency
Age	1				
LGBTQ+	-.0201	1			
Income	-.259**	.032	1		
DERS	.176**	.224**	-.0897*	1	
Self-harm Frequency	.282**	.228**	-.218**	.378**	1

LGBTQ+ = Binary variable, recording whether participants identified with a gender identity and/or sexual orientation minority.
DERS= Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004).
* $p < .05$
** $p < .001$

TABLE 2

TABLE 2. Multivariate negative binomial regression, assessing the relationship between LGBTQ+ status, difficulties in emotion regulation, age and income with self-harm frequency (N=270).

	IRR	SE	z	P.	95% C.I lower	95% CI upper
LGBTQ+	3.38	.64	6.42	<.001	2.33	4.90
DERS	1.01	.004	3.77	<.001	1.006	1.02
Age	1.09	.013	6.95	<.001	1.062	1.11
Income	.910	.036	-2.38	.017	.842	.984
Constant	19.05	12.18	4.61	<.001	5.44	66.69

IRR = Incidence Rate Ratio; the exponent of the unstandardised B coefficient.
LGBTQ+ = Binary variable, recording whether participants identified with a gender identity and/or sexual orientation minority.
DERS= Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004).

FIGURES

FIGURE 1

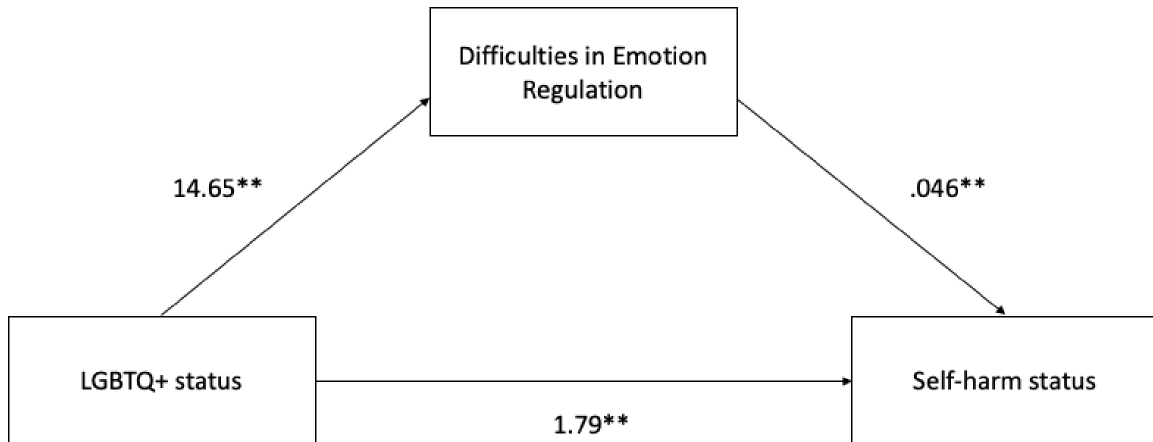

FIGURE 2

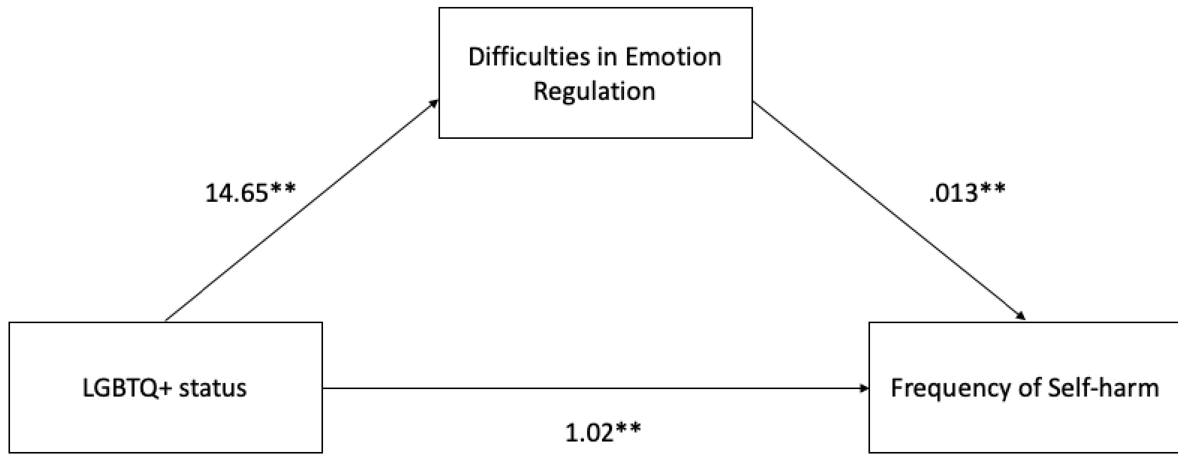

FIGURE CAPTIONS

FIGURE 1

FIGURE *1*. Difficulties in emotion regulation, as measured by the DERS (Gratz & Roemer, 2004), mediate the relationship between gender identity and/or sexual orientation minority (LGBTQ+) status and self-harm status.
Values indicate the unstandardised B coefficients.
Sobel test z-value = 4.55; $p<.001$. ** $p < .001$
LGBTQ+ status = Binary variable, recording whether participants identified with a gender identity and/or sexual orientation minority.
Self-harm status = Binary variable recording the presence or absence of a lifetime history of self-harm.

FIGURE 2

FIGURE *2*. Difficulties in emotion regulation, as measured by the DERS (Gratz & Roemer, 2004), mediate the relationship between LGBTQ+ status and the frequency of self-harm.
Values indicate the unstandardised B coefficients.
Sobel test z-value = 2.94, $p < .01$. ** $p < .001$.
LGBTQ+ status = Binary variable, recording whether participants identified with a gender identity and/or sexual orientation minority.
Self-harm status = Binary variable recording the presence or absence of a lifetime history of self-harm.