

**Is affiliation with alternative subcultures associated with  
self-harm?**

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## Introductory Chapter

This thesis focuses on the relationship between young people who affiliate with alternative subcultures and self-harm and/or suicide. Alternative subcultures can be described as groups that are distinct from “mainstream” cultures. Affiliation with such groups can be broadly defined as having a strong collective identity to a group with specific values and tastes, typically centred around music preference, clothing, hairstyles, make-up, tattoos and piercings (Greater Manchester Police; GMP, 2013; Moore, 2005). Some alternative subcultures have also been associated with “dark, sinister and morbid” themes, such as Goths, Emos, and Metaller (Young, Sproeber, Groschwitz, Preiss, & Plener, 2014). Self-harm can be defined as the deliberate act of harming oneself, with or without suicidal intent. This commonly involves cutting and self-poisoning (NICE, 2013). Other behaviours that can be described using this term include non-suicidal self-injury (NSSI; the intentional destruction of body tissue without suicidal intent) and suicidal behaviours such as suicidal ideation and attempts (self-harm with some intent to die; Klonsky & Muehlenkamp, 2007; Nock, Borges, Bromet, Cha, Kessler, & Lee, 2008). Some would argue that NSSI is distinct from self-harm, and as such it features as a disorder in the DSM-V as Non-Suicidal Self-Injury Disorder (NSSID; APA, 2013), however there remains some controversy over the latter (Kapur, Cooper, O'Connor, & Hawton, 2013). The associations between alternative subgroup affiliation and self-harm and/or suicide were explored through a systematic review and empirical research study using quantitative methodology.

It is well documented in the literature that the prevalence of self-harm and suicide is particularly high in adolescents and young adults, with suicide being one of the leading causes of death in this population (Hawton, Saunders, & O'Connor, 2012; WHO, 2014). Self-harm has become a clinical and public health concern with up to 30,000 adolescents receiving

hospital treatment each year (Hawton, Rodham, & Evans, 2006) and prevalence rates rising to between 7-14% for young people in the UK (Hawton & James, 2005; Skegg, 2005; Swannell, Martin, Page, Hasking, & St John, 2014). Minority groups are another population who appear to have elevated rates of self-harm, including Lesbian Gay Bisexual and Transgender (LGBT; Jackman, Honig, & Bockting, 2016), ethnic minorities (Bhui, McKnezie, & Rasul, 2007) and alternative subcultures (Young et al., 2014). However, there is a paucity of research into the latter population. This presented a gap to conduct a systematic review of the available literature in an attempt to understand the association between alternative subculture affiliation and self-harm and suicide.

Chapter 1 describes the systematic process taken in an attempt to understand the links between alternative subculture affiliation and both self-harm and suicide. Ten studies were included which focused on self-harm and/or suicide and alternative identity through subculture affiliation (e.g. Goth) or music preference (e.g. Heavy Metal). The results indicated that there is an association between alternative subculture affiliation and self-harm and suicide, though the lack of research in the area and methodological limitations impact on the extent to which the underlying mechanisms can be understood.

Leading on from the systematic review, Chapter 2 presents the empirical study which investigated the factors that might contribute to the increased risk of NSSI in alternative subcultures, specifically focusing on variables that have been found to be linked to NSSI in young people; emotion dysregulation, depression, identity confusion and exposure to self-harm. The aim of this study was to increase our understanding of the mechanisms involved that might explain this increased risk of NSSI. Alternative subcultures were found to be at a greater risk of NSSI in comparison to affiliations with other subcultures, though this association lessened when the other variables were accounted for. A key predictor of NSSI in this population was emotion dysregulation. The findings highlight the importance of raising

awareness of the potential risk of self-harm/suicide in alternative subcultures in order to create a greater understanding and direct resources appropriately.

The author plans to submit both parts of the thesis to the British Journal of Clinical Psychology and the author guidelines have been followed in preparation for this (Appendix A).

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## **Chapter 1: Systematic Review**

### **Exploring the factors that contribute to an increased risk of self-harm and suicide in alternative subcultures: A systematic review<sup>1</sup>**

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<sup>1</sup> For submission to the British Journal of Clinical Psychology (5000 word limit excluding abstract, tables, figures and references); Appendix A

## Abstract

Rates of self-harm and suicide are increasing in young people. The literature suggests that individuals who identify with alternative subcultures (e.g. Goth) may be at a greater risk.

**Objectives:** To explore the prevalence of self-harm and suicide in alternative subcultures and the factors that might contribute to this increased risk. **Methods:** Using a systematic strategy, the databases PsycINFO, Scopus, MEDLINE and Web of Science and the E-Thesis online service (ETHOS) were searched for English language only papers, with no restrictions in terms of date of publication. Papers were selected that included data on self-harm and/or suicide AND alternative subculture identity (e.g. Goth) and/or preference for alternative music (e.g. Heavy Metal). Ten papers were included; seven cross-sectional, two longitudinal and one cross-sectional state level comparison study. Studies were assessed by two reviewers for risk of bias using an adapted version of the Agency for Healthcare Research and Quality (AHRQ) assessment tool (Williams, Plassman, Burke, Holsinger, & Benjamin, 2010).

**Results:** The findings indicated that individuals who associated with alternative subcultures were at a greater risk of self-harm and suicide, though the mechanisms involved in the association were less clear. **Conclusions:** More research is required to understand this association between self-harm, suicide and alternative subculture affiliation, and the factors underlying it.

**Keywords:** Alternative subculture, heavy metal, self-harm, suicide, systematic review, Goth

### Practitioner points

- The review supports the suggestion that those who identify as belonging to an alternative subculture may be at a higher risk of self-harm and suicidal behaviour and presents preliminary evidence that alternative affiliation predicts self-harm over time, and that this effect holds whilst adjusting for a number of likely confounders.

- The findings highlight the importance of increasing the awareness of the victimisation and potential risk that these groups hold and suggests areas for intervention in health, educational and social services.
- The review does not however present what it is about alternative subculture affiliation (or alternative music preference) that could contribute to the risk of self-harm, therefore studies with a greater focus on mechanisms are needed.
- Methodological limitations (e.g. cross-sectional studies, small sample of “alternative” participants, westernised samples) restricted the reliability and validity of the results which impacted on the extent to which the findings could be generalised more widely.

## Introduction

Suicide and self-harm are global public health concerns (Chan et al., 2016), with an estimated 804,000 deaths by suicide recorded worldwide in 2012 (World Health Organisation; WHO, 2014). Suicide is also a leading cause of death in adolescents (Hawton, Saunders, & O'Connor, 2012) and the second leading cause of death in 15-29 year olds (WHO, 2014). Self-harm is amongst one of the greatest predictors of death by suicide in adolescents (Brent, McMakin, Kennard, Goldstein, Mayes, & Douaihy, 2013; Hawton & Harriss, 2007), increasing the risk by up to 10-fold (Ougrin, Tranah, Stahl, Moran, & Asarnow, 2015). A potential consequence of self-harm is accidental death (Kehrberg, 1997). It has been reported that alternative subcultures may be at an increased risk of self-harm and suicide, though this is also often considered a myth (Liverpool CAMHS, 2016; Mental Health Foundation, 2017). The current review aims to clarify the association between affiliation with alternative subcultures and self-harm or suicide.

Self-harm can be defined as any intentional “act of self-poisoning or self-injury carried out by a person, irrespective of their motivation” including self-poisoning or self-injury by cutting (NICE, 2013). Behaviours that fall under this term include Non-Suicidal Self-Injury (NSSI; deliberate self-harm without the desire to die) and suicidal behaviours or attempts (self-injurious behaviours with some intent to end life; Nock, 2010; Nock, Borges, Bromet, Cha, Kessler, & Lee, 2008). Self-harm is evident in the general population in both adults and adolescents (Kirtley, O'Carroll, & O'Connor, 2016). It has become a common cause for hospital admissions, with over 200,000 people attending hospital each year in the UK (Hawton et al., 2007) and between 300,000 and 420,000 people visiting emergency departments in the US yearly for self-inflicted injuries (Owens, Barrett, Gibson, Andrews, Weinick, & Mutter, 2010). Adolescents appear to be a group who are

particularly vulnerable to self-harm with 30,000 adolescents in the UK receiving hospital treatment each year for this purpose (Hawton, Rodham, & Evans, 2006).

The US Department of Health and Human Services (HHS, 2012) developed a National Strategy for Suicide Prevention which identified “high risk” groups that were more vulnerable to self-harm, including suicidal behaviour and suicide. In this document, some minority groups, such as some ethnic minorities (e.g. South Asian Women) and Lesbian, Gay, Bisexual and Transgender (LGBT; Al-Sharifi, Krynicki, & Upthegrove, 2015; Baldwin & Griffiths, 2009; Bhui, McKenzie, & Rasul, 2007) were highlighted as being at a greater risk. Alternative subcultures or social groups may be another high-risk group for self-harm and suicide (Rutledge, Rimer, & Scott, 2008). These individuals have a set of group-specific values and can be identified by distinctive styles and tastes to include clothing and music preference. Some recognised alternative groups include Goths, Emos and Punks (Greater Manchester Police; GMP, 2013). Affiliations such as Goth and Punk are focused adolescent identities that are now culturally shared, although not all of these movements are current or as prevalent as they may have been historically. The observation of increased self-harm and suicide in such groups has been apparent in the media in recent years, specifically in relation to “Goth” subculture (Bazian, 2015; Cooper, 2015; Curtis & Carvel, 2005). However, recent clinical guidance and self-help information has suggested this association is a myth (Liverpool CAMHS, 2016; Mental Health Foundation, 2017). The lack of available evidence makes it difficult to confirm or challenge these reports.

There are several plausible theoretical pathways to explain the observed link between affiliation with an alternative subculture and increased risk of self-harm and/or suicide. Subcultural theory suggests that young people who feel rejected by society (e.g. working class) may seek status elsewhere by rejecting traditional norms and developing a set of values that give them meaning. In some groups, behaviours adopted may lead to delinquency

(Cohen, 1955) though in other subcultures, groups may give individuals a sense of self-worth and a space among dominant mainstream cultures (Clarke, Hall, Jefferson, & Roberts, 1976). Alternative subculture affiliation may lead to self-harm, due to increased exposure to additional risk factors, for example victimisation, stigma and hate crime (e.g. verbal and physical aggression; Garland & Hodgkinson, 2014). This may contribute to “minority stress” which in turn may reflect the elevated rates of self-harm in these groups (Young, Sproeber, Groschwitz, Preiss, & Plener, 2014). People may then self-harm as way of coping with such stress (Nixon, Cloutier, & Aggarwal, 2002). An example of this victimisation is the social stigma and aggression faced by Sophie Lancaster in 2007, when she was murdered by a group of young males due to her affiliation with Goth culture (Bowes et al., 2015).

A second explanation is that self-harm may lead to alternative subculture affiliation, in that individuals choose to identify with the subculture based on their own experiences. This has been understood as “selection” (Young, Sweeting, & West, 2006) or by Arnett’s alienation theory (Arnett, 1996). Young people who are vulnerable to low mood and self-harm may be attracted to groups with peers of similar difficulties who validate their experiences through music lyrics (Arnett, 1991; Bowes et al., 2015; Martin, Clarke, & Pearce, 1993; Young et al., 2006; Young et al., 2014). This theory implies that a vulnerability to self-harm and suicide may be the cause of alternative subculture affiliation rather than a consequence. This vulnerability may have been created through earlier exposure to adversity, such as trauma, neglect, isolative environments or bereavements (Arnett, 1996; Healthcare Quality Improvement Partnership; HQIP, 2016).

A final explanation is that alternative subculture affiliation leads to self-harm due to the behaviour being modelled by peers or icons, for example music groups or bands (Young et al., 2014). The media may have played a role in reinforcing this message, but it has also influenced the public perception of alternative subcultures and the links with risk behaviours.

For example, there has been widespread public concerns about the possibility that song lyrics may promote self-harm and suicide (Stack, Gundlach, & Reeves, 1994; examples of song lyrics included in Appendix Q) which has led to efforts from parents to promote the use of warning labels on certain types of music (Stack et al., 1994). Furthermore, parents of suicide victims have accused Heavy Metal groups of promoting suicidal behaviours and have proceeded to sue musicians (Martin et al., 1993). Modelling of peers and advertisement from the media may contribute to the risk behaviours becoming a normative component of such cultures leading to “social contagion”, increasing self-harm within those who identify with such groups (Young et al., 2006).

There is a cited idea in both research and the media (Bazian, 2015; Cooper, 2015; Curtis & Carvel, 2005) that there is a link between self-harm, suicide and identification with an alternative subculture or having a preference for such music. However, the literature has not yet been systematically reviewed. This systematic review aims to clarify the relationship between both people who self-identify as being a part of an alternative subculture and/or those who have a preference for an alternative style of music (e.g. Heavy Metal, Goth) and the occurrence of self-harm and/or suicide. Whilst alternative subculture affiliation may extend beyond musical preferences, music preference remains a key indicator of affiliation.

## Method

### Search Strategy

A protocol (Appendix B) for this review was pre-registered with PROSPERO (<https://www.crd.york.ac.uk/PROSPERO/printPDF.php?RecordID=45402&UserID=22813>, registration number CRD42016045402). The electronic databases PsycINFO, Scopus, MEDLINE and Web of Science were searched from the earliest date to July 2016 using the following key subject terms, identified from scoping searches: “self injur\*” OR “self-injurious behav\*” OR “self harm\*” OR self-harm OR NSSI OR DSH OR “self mutil\*” OR “non-suicidal self-injury\*” OR “non-suicidal self-injury disorder” OR “self-cut\*” OR “self destruct\*” OR suicide\* AND goth\* OR emo OR punk OR subculture\* OR “adolescent identity” OR metal\* OR “heavy metal\*” OR “alternative adolescent subculture” OR “alternative culture” OR “youth subculture\*” OR “social group”. Additional controlled vocabulary searches were completed for MEDLINE (self-mutilation OR suicide OR self-injurious behaviour OR suicidal ideation OR attempted suicide OR poisoning AND social identification) and PsycINFO (self-injurious behaviour OR self-mutilation OR suicide OR attempted suicide OR self-destructive behaviour AND social groups OR social identity) and the E-thesis online service (ETHOS) was searched using general key terms (self-harm OR suicide) to capture any additional unpublished theses. These searches were updated in December 2016 prior to write up. The reference lists of included papers were manually searched for any additional papers of relevance and corresponding authors of included papers contacted to enquire about any unpublished potentially eligible research.

Screening of data was completed in parallel by two reviewers (MH and HN) using the inclusion and exclusion criteria. A third reviewer (PJT) clarified any uncertainties. This procedure consisted of firstly screening the titles and abstracts, followed by the full texts.

### **Inclusion and Exclusion Criteria**

Studies were included that a) presented new research data, b) included a measure of affiliation to an alternative subculture or of preference for alternative music genres, c) measured self-harm or suicide, and d) were English-language. Qualitative studies were excluded due to potential difficulties with synthesising evidence from different approaches (Dixon-Woods, Agarwal, Jones, Young, & Sutton, 2005). Alternative subculture affiliation was defined as:

A strong sense of collective identity and a set of group-specific values and tastes. This typically centres on distinctive style, clothing, make up, body art and music preference. Those involved usually stand out to both fellow participants and to those outside the group. Groups typically under the “alternative” umbrella include Goths, Emos, Punks and Metallers (Greater Manchester Police, 2013, para. 2).

Adding to this definition, the current review included those who had expressed a preference for alternative music, broadly defined as genres that have moved away from or define themselves as distinct from “mainstream” musical genres, including Metal, Punk, Goth or genres otherwise referred to as alternative. Studies where specific numbers or details of alternative subculture affiliation were not described were excluded.

### **Risk of Bias**

Studies that were selected for inclusion were assessed for risk of bias, independently by two raters (MH and HN), using the Agency for Healthcare Research and Quality (AHRQ)

assessment tool that has been used for observational research (Williams et al., 2010). This tool was designed to be adapted to the specific context of the research being reviewed, and has previously been used in systematic reviews of self-harm research (Taylor, Hutton, & Wood, 2014). The tool covers nine domains representing different risks of bias. Each domain is graded as “yes”, “no”, “partial” or “cannot tell”.

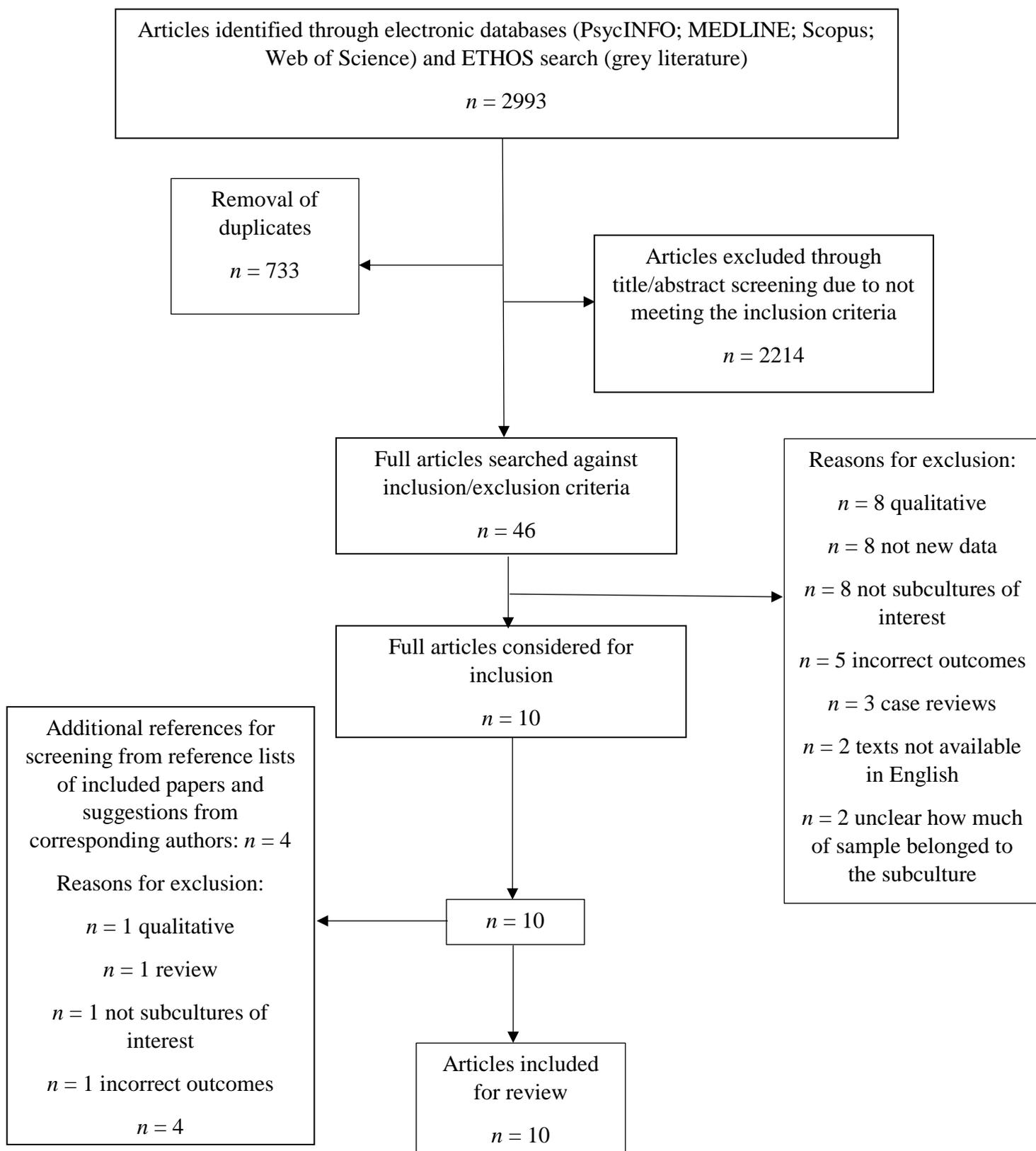


Figure 1. Flow diagram of the selection process

## Results

### Summary of Included Papers

Using the selection process highlighted in Figure 1, ten papers were selected for inclusion; nine from published journals and one an unpublished thesis (O'Connor, 2015). A summary of the study characteristics is presented in Table 1. Seven of the studies were cross-sectional, two longitudinal and one a cross-sectional state-level comparison. Nine used samples from western societies (four from the US), and one did not describe the sample adequately to judge location (Burge, Goldblat, & Lester, 2010). Most of the studies focused on adolescents and young adults from the ages of 14 – 24 years, with one exception which included an additional older age group of 24 – 35 years (Stack et al., 1994). Six of the samples were from student populations.

Eight of the ten studies focused on self-harm, one considered both self-harm and NSSI (Young et al., 2014) and one study focused on completed suicide (Stack et al., 1994).

### Risk of Bias

The outcomes of the risk of bias assessment, measured by an adapted AHRQ, are presented in Table 2. Some recurrent methodological problems included: an absence of power calculations to justify sample size; little information or acknowledgement of the handling of missing data; lack of detail concerning sample characteristics, recruitment methodology and the use of student samples. With the exception of one study (O'Connor, 2015), there was no justification of sample size for the analyses undertaken, potentially presenting results that were under powered. This is less of a concern for seven of the studies which had large sample sizes ( $n = 241$  to  $3694$ ), though the remaining three may be at risk of

type II errors, failing to detect actual effects (Burge et al., 2010; Lester & Whipple, 1996; Scheel & Westefeld, 1999).

Six studies (Burge et al., 2010; Lester & Whipple, 1996; Martin et al., 1993; Stack et al., 1994; Young et al., 2006; Young et al., 2014) did not give sufficient detail, if any, about the presence of missing data or attrition rates and how it was handled. Missing data could create bias depending on how it was handled and the nature of it, particularly if it was missing not at random (MNAR; Sterne et al., 2009). For example, in this context, people with greater self-harm may have been less likely to provide data on self-harm. Additionally, six studies also lacked detail concerning the recruitment of participants (Burge et al., 2010; Lacourse et al., 2001; Lester & Whipple, 1996; Martin et al., 1993; Scheel & Westefeld, 1999; Young et al., 2014). In particular, many studies failed to provide a definition of an “adolescent”. This was problematic since different studies may adopt differing definitions, creating inconsistency in results and potentially impacting on replicability and generalisation. Furthermore, six studies used student samples either from secondary schools or universities where opportunistic sampling (e.g. completing the study in regular classes or a single school) may have created further biases (Burge et al., 2010; Lacourse et al., 2001; Lester & Whipple, 1996; Martin et al., 1993; Scheel & Westefeld, 1999; Young et al., 2014).

An area where studies varied was in the use of validated tools to measure constructs. Five studies (Bowes et al., 2015; Lester & Whipple, 1996; Martin et al., 1993; O’Connor, 2015; Young et al., 2006) did not use full validated tools to measure the outcome of self-harm. In many cases, this took the form of using a single question adapted from a longer measure. Such single items may lack content validity and reliability (Hom, Joiner Jr, Bernert, & Joiner, 2016). Similarly, four studies (Burge et al., 2010; Lacourse et al., 2001; Lester & Whipple, 1996; Young et al., 2006) used partially validated methods to measure subculture affiliation and two were judged as not using a valid method (Martin et al., 1993; Stack et al.,

1994). In the absence of available validated measures that assess alternative subculture affiliation or music preference (Scheel & Westefeld, 1999), those which gave a clear description of the development and use of the tool were deemed valid. Six of the ten studies attempted to control for confounding variables in the analysis, with only four of these adequately controlling for both demographic variables and potential predictors or correlates of self-harm. It is important to control for such confounding variables to obtain accurate parameter estimates of the association between alternative subculture affiliation and self-harm. Appendix C includes further details of the AHRQ and the decision-making processes involved in the assessment.

### **Alternative Subculture Affiliation**

Of the four studies that focused on alternative subculture affiliation, two paid particular attention to the Goth subculture (Bowes et al., 2015; Young et al., 2006), one concentrated on Goth and Emo subcultures (O'Connor, 2015) and one explored an alternative subculture factor, encompassing Goths, Emos and Punks, based on factor analysis (Young et al., 2014). All four studies focused on self-harm, and one additionally explored NSSI within the subcultures mentioned (Young et al., 2014). All studies found a significant relationship between alternative subculture affiliation and self-harm.

Two studies were longitudinal in design, however, Young and colleagues (2006) employed a cross-sectional analysis (i.e. did not focus on the change in variables over time). Therefore, we can only infer a direction of effect from one study (Bowes et al., 2015). This study found that participants who affiliated heavily with an alternative subculture identity had a greater risk of self-harm,  $OR = 5.14$ , 95% CI [3.58, 7.36], across a three-year time period (15 – 18 years; Bowes et al., 2015). These effects remained significant, though much

reduced, whilst adjusting for confounders to include previous depression and self-harm, gender, early risks factors and victimisation, *OR* = 1.33, 95% CI [1.19, 1.48].

Similarly, an additional two studies (Young et al., 2006; Young et al., 2014) found that those who at least moderately self-identified with an alternative subculture (Goth, Emo, Punk, Mosher) had more than three times the odds of endorsing self-harm (*OR* = 3.49 – 14.16; Young et al., 2006), NSSI (*OR* = 3.6 – 3.9) and suicidal thoughts (*OR* = 3.4), and six times the odds of having attempted suicide (*OR* = 6.0). Much lower odds were found in young people who identified as a “Jock” (NSSI *OR* = 1.29 – 2.25; suicidal ideation *OR* = 1.09; past suicide attempt *OR* = 0.69; Young et al., 2014). Moreover, the affiliation with Goth culture specifically had a stronger association with self-harm, *OR* = 16.35, 95% CI [5.06, 52.91], and was the only subculture that remained a significant predictor of self-harm when other subcultures were adjusted for. However, the large confidence intervals observed possibly reflect the small sample size ( $n = 15$ ; Young et al., 2006), affecting the precision of the results. Effect sizes remained similar or were larger when confounding variables were adjusted for (e.g. substance use, socioeconomic status, gender, depression). However, peer groups were not matched in terms of characteristics (e.g. age, gender) and so it is possible that there are other group differences that could explain this difference in alternative vs. non-alternative peers. The cross-sectional nature of the analyses of these studies limits the ability to make inferences regarding causality or the direction of effect.

Another cross-sectional study (O’Connor, 2015) found Emo participants reported more self-harm (including suicidal ideation;  $d = 1.15$ ) than the Goth participants ( $d = 1.44$ ), however a different study found Goth and Emo alternative groups loaded onto a single factor (Young et al., 2014). Out of the four studies discussed, three used non-validated items from larger tools to measure self-harm, but identified similar relationships to the one study that did use validated scales (Young et al., 2014).

## Music Preference

The six studies that explored the association between music preferences and self-harm or suicide focused on the Heavy Metal genre, which in some studies also included other genres under this term; Alternative, Punk and Classic Rock (Burge et al., 2010) and Rock, Metal and Punk (Martin et al., 1993). Comparison analyses and factor analysis highlighted similarities between the grouped genres. Five studies investigated the links between a preference for Heavy Metal music and self-harm and one focused on completed suicide (Stack et al., 1994). All six studies were cross-sectional in nature therefore the direction of effects is unknown.

Findings indicated that there were small positive associations between a preference for Heavy Metal music and increased self-harm; namely suicidal ideation ( $r = .24$ ; Burge et al., 2010), past suicidal ideation ( $r = .21$ ; Lester & Whipple, 1996) and suicide risk including attempted suicide and suicidal ideation ( $r = .13 - .26$ ; Lacourse et al., 2001). Furthermore, higher percentages of Heavy Metal fans (31-74%) reported suicidal thoughts in comparison to non-fans (14% - 35%) (Martin et al., 1993; Scheel & Westefeld, 1999).

Whilst three studies reported a stronger association between music preference and self-harm (e.g. suicidal ideation and attempts) in females ( $r = .26$ , Lacourse et al., 2001;  $OR = 4.3 - 6.5$ , Martin et al., 1993; Scheel & Westefeld, 1999), another study reported a stronger relationship in males ( $r = .30$ ; Burge et al., 2002), and so the effect of gender on this finding is unclear. In one study, the association of music preference and self-harm disappeared when adjusting for a range of confounders including self-estrangement/powerlessness ( $B = .15 - .16$ ), father negligence ( $B = .01 - .08$ ), normlessness ( $B = -.03 - 0.19$ ) and substance use ( $B = .19 - .31$ ; Lacourse et al., 2001) but as these factors were not explored in other studies, conclusions cannot be made.

Stack and colleagues (1994) compared geographic regions (US states) and reported a significant positive association ( $r = .56$ ) between a preference for Heavy Metal music and completed suicide in young people (aged 15- 24 years), which remained evident, though smaller, when confounding variables were controlled for (e.g. divorce, immigration, social economic status, religion and ethnicity;  $\beta = .26$ ). Importantly, the design of this study differed dramatically from the other nine studies. Inferences regarding the association of music preference and self-harm for individuals are not possible, and could reflect the ecological fallacy (Winzar, 2015). The assessment of musical preference (magazine subscription) is also a proxy and it is unclear how well this mirrors musical preference when assessed directly.

Table 1

*Characteristics of Included Studies (n= 10)*

<b>Author(s), Year, Country</b>	<b>Study Design</b>	<b>Sample Characteristics</b>	<b>Subculture Affiliation/ Music Preference Measure</b>	<b>Self-Harm or Suicide Measure</b>	<b>Key Findings</b>
1. Bowes et al. (2015); Avon, UK	Longitudinal	<i>N</i> = 3694 young people Mean age = 17.8 years, <i>SD</i> = 0.5	Adapted Peer Crowd Questionnaire (PCQ; La Greca, Prinstein & Fetter, 2001; Mosbach & Leventhal, 1988)	Development and Wellbeing Assessment (DAWBA; Goodman, Heiervang, Collishaw & Goodman, 2011); Clinical Interview Schedule-Revised (CIS-R; Lewis, 1994)	A significant association was found between the extent to which young people identified as Goth at 15 years and self-harm at 18 years old, after adjusting for other potential risk factors (including previous self-harm and depression; <i>OR</i> = 1.33).
2. Burge, Goldblat & Lester (2010); Country not detailed	Cross-sectional	<i>N</i> = 77 secondary school students (41 male) Mean age = 17.5 years, <i>SD</i> = 0.6	Non-validated measure of music preference	The Suicidal Ideation Questionnaire (Reynolds, 1986)	There was a significant positive association between listening to Heavy Metal music and increased suicidal ideation ( <i>r</i> = .24). Heavy Metal music was associated with suicidal ideation in males ( <i>r</i> = .30).

<b>Author(s), Year, Country</b>	<b>Study Design</b>	<b>Sample Characteristics</b>	<b>Subculture Affiliation/ Music Preference Measure</b>	<b>Self-Harm or Suicide Measure</b>	<b>Key Findings</b>
3. Lacourse, Claes & Villeneuve (2001); Canada, US	Cross-sectional	<i>N</i> = 275 secondary school students (154 males) Mean age = 16.22 years	Non-validated measure of music preference	Suicidal risk scale which classifies adolescents as 'high' or 'low' suicidal risk (Tousignant, Hamel & Bastien, 1988)	There was a small positive association between preference for Heavy Metal music and suicidal ideation and attempts ( $r = .13 - .26$ ). Females who had a preference for Heavy Metal music were a significantly greater risk of suicide ( $r = .26$ ) in comparison to males ( $r = .13$ ), determined by higher reports of serious suicidal ideation and attempted suicide ( $r = .26$ ). However, this finding was diminished when controlling for other risk factors.
4. Lester & Whipple (1996); US	Cross-sectional	<i>N</i> = 93 undergraduates (35 male) Mean age = 24 years, <i>SD</i> = 6.0	Non-validated measure of music preference	Non-validated measure of self-harm	A significant positive association was found between having a preference for Heavy Metal music and prior suicidal ideation ( $r = .21$ ) but not current suicidal ideation ( $r = -.03 - -.13$ ).

<b>Author(s), Year, Country</b>	<b>Study Design</b>	<b>Sample Characteristics</b>	<b>Subculture Affiliation/ Music Preference Measure</b>	<b>Self-Harm or Suicide Measure</b>	<b>Key Findings</b>
5. Martin, Clarke & Pearce (1993); Australia	Cross-sectional	<i>N</i> = 247 students (138 males) Mean age = 14.76 years	Non-validated measure of music preference	Achenbach Youth Self Report (YSR; Achenbach & Edelbrock, 1987)	Significant associations were found between a preference for Rock/Metal music and suicidal thoughts and self-harm. Higher percentages of those who had a preference for Heavy Metal music reported suicidal thoughts (31- 66%) and deliberate self-harm (20 – 62%) in comparison to those who had other music preferences (15 - 35% suicidal thoughts; 8- 14% self-harm).
6. O'Connor (2015); US	Group comparison correlational	<i>N</i> = 241 young adults (79 males, 10 transgender) Mean age = 19.8 years, <i>SD</i> = 2.31  218 young adults completed the RBQ-A	Participants self- identified as Goth or Emo using a nominal scale	Risky Behaviour Questionnaire-Adolescents (RBQ-A; Auerbach & Abela, 2006); Center for Epidemiologic Studies Depression Scale-Revised (CESD-R; Eaton, Smith, Ybarra, Muntaner & Tien, 2004)	A significant difference was found between participants who identified with alternative subcultures; affiliation with the Emo subculture reported significantly more self-harm (including suicidal ideation) to the Goth subculture ( <i>d</i> = 1.15 – 1.44).

<b>Author(s), Year, Country</b>	<b>Study Design</b>	<b>Sample Characteristics</b>	<b>Subculture Affiliation/ Music Preference Measure</b>	<b>Self-Harm or Suicide Measure</b>	<b>Key Findings</b>
7. Scheel & Westefeld (1999); US	Cross-sectional	<i>N</i> = 121 high school students (44 males) Mean age = 17.2 years	Non-validated measure of music preference	Suicidal Risk Questionnaire (SRQ; Westefeld, Cardin & Deaton, 1992)	Participants who had a preference for Heavy Metal music had more suicidal thoughts to participants who had other music preferences. Within this group, 74% of females reported occasionally or seriously thinking about suicide in comparison to 35% of females who did not report a preference for Heavy Metal music, and 42% of males who had a preference for Heavy Metal music reported occasionally or seriously thinking about suicide in comparison to 15% of males who did not have this preference.

<b>Author(s), Year, Country</b>	<b>Study Design</b>	<b>Sample Characteristics</b>	<b>Subculture Affiliation/ Music Preference Measure</b>	<b>Self-Harm or Suicide Measure</b>	<b>Key Findings</b>
8. Stack, Gundlach & Reeves (1994); US	Cross-sectional state level comparison	50 states, aged 15- 24 and 25-34	Magazine subscriptions to “metal edge” (a Heavy Metal music magazine)	Suicide data from the annual Mortality Detail Files (U.S National Centre for Health Statistics, 1988); Population data from U.S. Bureau of the Census (1991)	A significant correlation was found between youth suicide and preference for Heavy Metal music ( $r = .56$ ). When controls were accounted for, a small but significant effect remained ( $\beta =$ $0.26$ ), but other factors were more significant (Black ethnicity; $\beta = -$ $0.41$ ; Divorced; $\beta = 0.30$ ). In the older age group (25 – 34 years), there was no significant effect of a preference for Heavy Metal music and suicide when other factors were controlled for ( $\beta = 0.17$ ).

<b>Author(s), Year, Country</b>	<b>Study Design</b>	<b>Sample Characteristics</b>	<b>Subculture Affiliation/ Music Preference Measure</b>	<b>Self-Harm or Suicide Measure</b>	<b>Key Findings</b>
9. Young, Sweeting & West (2006); Scotland, UK	Longitudinal	<i>N</i> = 1258 adolescents (640 males) Aged 19)	Non-validated measure of subgroup affiliation	Computerised version of the diagnostic interview schedule for children (Voice-DISC; West, Sweeting, Der, Barton & Lucas, 2003)	A strong positive association was found between affiliation with Goth subculture and self-harm, including attempted suicide ( <i>OR</i> = 16.35), which remained after confounders were controlled for (e.g. gender, <i>OR</i> = 1.42; substance use, <i>OR</i> = 2.04; prior depression, <i>OR</i> = 1.13). Positive associations were also found between other alternative subcultures (e.g. Punk, Heavy Metal, Moshers) and self- harm ( <i>OR</i> = 3.49 – 4.42), though the association was much stronger for Goth ( <i>OR</i> = 14.16) which remained a significant predictor of self-harm when other subcultures were adjusted for.

<b>Author(s), Year, Country</b>	<b>Study Design</b>	<b>Sample Characteristics</b>	<b>Subculture Affiliation/ Music Preference Measure</b>	<b>Self-Harm or Suicide Measure</b>	<b>Key Findings</b>
10. Young, Sproeber, Groschwitz, Preiss & Plener (2014); Germany	Cross-sectional	<i>N</i> = 452 students (209 females) Aged 14 – 17years	Non-validated measure of subgroup affiliation	Self-harm Behaviour Questionnaire (SHBQ; Gutierrez, Osman, Barrios & Kopper, 2001); Functional Assessment of Self-injury (FASM; Nock & Prinstein, 2004)	A positive association was found between participants who affiliated with an alternative subculture and NSSI ( <i>OR</i> = 3.6 – 3.9), suicidal thoughts ( <i>OR</i> = 3.4) and attempting suicide ( <i>OR</i> = 6.0) in comparison to their non-alternative peers ( <i>OR</i> = 0.69 – 2.25). When confounding variables were adjusted for (e.g. substance use, socioeconomic status, gender) this effect was strengthened with the alternative group being more than 4 times the odds to engage in NSSI ( <i>OR</i> = 4.04 – 4.16) and between almost 4 to 8 times the odds of engaging in other forms of self-harm (e.g. suicidal ideation, <i>OR</i> = 3.7 and attempt suicide, <i>OR</i> = 8.10).

Table 2.

*Summary Table of Risk of Bias Assessment (n=10)*

<b>Author(s)</b>	<b>Unbiased Recruitment of Cohort</b>	<b>Adequate Description of Cohort</b>	<b>Validated Measure for Determining Self-Harm and Suicidal Behaviour</b>	<b>Validated Method for Ascertaining Belonging to an Alternative Subculture</b>	<b>Adequate Handling of Missing Data</b>	<b>Analysis Controls for Confounding Variables</b>	<b>Analytic Methods Appropriate</b>	<b>Sample Size Calculated</b>	<b>Adequate Follow Up Period (if longitudinal)</b>
Bowes et al. (2015)	Yes	Yes	Partial	Yes	Yes	Yes	Yes	No	Yes
Burge, Goldblat & Lester (2010)	Partial	Partial	Yes	Partial	Cannot tell	Cannot tell	Yes	No	N/A
Lacourse, Claes & Villeneuve (2001)	No	Yes	Yes	Partial	Yes	Yes	Yes	No	N/A
Lester & Whipple (1996)	Partial	Partial	Partial	Partial	Cannot tell	Partial	Yes	No	N/A
Martin, Clarke & Pearce (1993)	Partial	Yes	Partial	No	Cannot tell	No	Yes	No	N/A

<b>Author(s)</b>	<b>Unbiased Recruitment of Cohort</b>	<b>Adequate Description of Cohort</b>	<b>Validated Measure for Determining Self-Harm and Suicidal Behaviour</b>	<b>Validated Method for Ascertaining Belonging to an Alternative Subculture</b>	<b>Adequate Handling of Missing Data</b>	<b>Analysis Controls for Confounding Variables</b>	<b>Analytic Methods Appropriate</b>	<b>Sample Size Calculated</b>	<b>Adequate Follow Up Period (if longitudinal)</b>
O'Connor (2015)	Yes	Yes	Partial	Yes	Yes	No	Yes	Yes	N/A
Scheel & Westefeld (1999)	Partial	Yes	Yes	Yes	Yes	No	Yes	No	N/A
Stack, Gundlach & Reeves (1994)	Yes	No	Yes	No	Cannot tell	Partial	Yes	No	N/A
Young, Sweeting & West (2006)	Yes	Partial	Partial	Partial	Partial	Yes	Yes	No	Yes
Young, Sproeber, Groschwitz, Preiss & Plener (2014)	Partial	Yes	Yes	Yes	No	Yes	Yes	No	N/A

## Discussion

The aim of the review was to investigate the relationship that self-harm and suicide have with alternative subculture affiliation, including music preference as a proxy indicator of subculture affiliation. Four papers identified direct evidence of a positive association between alternative subculture affiliation and self-harm. Although limited to adolescents and young adults, the papers found this group to be between 3 and 16 times the odds of endorsing self-harm, in comparison to non-alternative peers. Moreover, one of these studies employed a longitudinal design providing evidence that alternative subculture affiliation may lead to or contribute to risk of self-harm, as opposed to being a consequence or epiphenomena of self-harm. More indirect evidence of this association between alternative subculture affiliation and self-harm came from the six studies that were concerned with musical preference. Small positive associations were found across studies for a preference for Heavy Metal music and self-harm, and one study found an association with completed suicide. Notably, music preference typically had a smaller association with indices of self-harm, possibly due to music preference being more removed from alternative subculture affiliation and informed by other factors.

The findings across several studies that participants who identified with alternative subcultures (through self-identification or music preference) also had experiences of adversity, including bullying or victimisation, difficult family relationships and prior emotional and/or behaviour difficulties (Bowes et al., 2015; Lacourse et al., 2001; Martin et al., 1993), provides some support for the suggestion that they are a group that may have pre-existing vulnerabilities to self-harm (Young et al., 2014). However, despite this potential link, several studies ( $k = 3$ ) found that the relationship between alternative affiliation and self-harm continued to exist after these confounding variables were controlled for (Bowes et al., 2015; Young et al., 2006; Young et al., 2014). These results appear to work against the hypothesis

that the association between alternative subculture affiliation and self-harm results solely from a shared vulnerability. That said, one study found that after controlling for correlates or predictors of self-harm, the association of alternative music preference and self-harm became insignificant (Lacourse et al., 2001) and other studies found a reduced effect size following adjustment for confounders. These studies indicate that pre-existing experiences of adversity (e.g. bullying, depression) do contribute to self-harm, as found in the general research (Vaughn, Salas-Wright, DeLisi, & Larson, 2015), however an effect of alternative subculture affiliation remained, though less apparent.

Multiple mediating processes may account for an association between alternative subculture affiliation and self-harm. Self-harm may be a way of coping with the minority stress that such groups may experience (e.g. victimisation, stigma, hate crime), or a mechanism that is more inherent to the group affiliation itself, such as modelling of others' behaviours (Young et al., 2014). These mediator processes have not been investigated and future research is therefore required to evaluate these hypotheses.

The gender difference which was observed in several studies ( $k = 3$ ) that females who identified with alternative subcultures had greater associations with self-harm (Lacourse et al., 2001; Martin et al., 1993; Scheel & Westefeld, 1999), suggests a possible moderating variable which should be explored further. The absence of this finding in the remainder of studies makes it difficult to draw any conclusions.

The sample sizes of the included studies varied from 77 to 3694 participants, however the number of participants who identified as alternative or who reported self-harm was small in many studies (e.g. less than 10% of overall sample), which may have limited power and reliability of effect estimates. Participants were predominantly young people from western societies (e.g. only one study included an older age group) and so conclusions cannot currently be generalised beyond this context. Alternative subculture affiliation is a culture-

bound construct, and different groups will emerge dependent on culture. However, there is some research to suggest that alternative subcultures do exist in non-westernised countries (Bin Quader, & Redden, 2015; Ma, 2002; Mulej, 2011; Rene & Airi-Alina, 2011).

Recruitment procedures, inclusion criteria and/or definitions of what constitutes an adolescent were not clearly stated in seven studies which may impair comparability of results where different definitions were used.

Studies had an over-reliance on self-report measures. These may be beneficial in assessing a taboo subject like self-harm, encouraging more honest responses (Thornberry & Krohn, 2000). Nonetheless, relying on self-report also creates a risk of shared method bias that may have inflated associations. Measures of subculture affiliation and music preference rarely had established psychometric properties, though they typically had good face validity. Poor psychometric properties would affect the validity of findings, for example, if measures do not represent important subcultures. However, a challenge to developing scales in this area is the shifting nature of youth culture. Several studies ( $k = 5$ ) used single or few item measures of self-harm which may lack content validity and carry a greater risk of error (false positive and false negatives) in identifying self-harm. Future research would benefit from a more comprehensive assessment of subculture affiliation and self-harm using validated measures and a variety of assessment mediums (e.g. self-report, interview, etc.).

In this review, music preference was included as a proxy to measure the alternative concept, but these two constructs are not directly comparable and had to be explored separately. Moreover, the definition of alternative varied between studies, which limits comparability further. In the current review, it was noted that although alternative subcultures were the population of interest, the papers that were explored under this category largely focused on Goth subculture, highlighting the prevalence of this culture in the media. A final

limitation of the review is that it was limited to papers that were available in English language.

The review supports the suggestion that those who identify as belonging to an alternative subculture are at a higher risk of self-harm and suicidal behaviour. Moreover, there is preliminary evidence that alternative affiliation predicts self-harm over time, and that this effect holds whilst adjusting for a number of likely confounders. Nonetheless, it is not yet clear what it is about alternative subculture affiliation (or alternative music preference) that could contribute to the risk of self-harm, therefore studies with a greater focus on mechanisms are needed.

There are a range of avenues that may be suitable for interventions with these groups. Increasing the awareness of the victimisation of alternative subcultures through campaigns in order to reduce stigma and empower subcultures may impact on outcomes for individuals (Bowes et al., 2015; World Health Organisation; WHO, 2014). For example, the Sophie Lancaster Foundation is an organisation that has been set up for the purpose of reducing the victimisation of such groups (Young et al., 2014). Another route for intervention would be training health, education and social services staff about the nature and function of both subculture identities and self-harm and suicide, allowing professionals to identify those at risk of self-harm, suicide and contagion and intervene early (Department of Health; DOH, 2012; Young et al., 2014). Introducing preventative programmes to these services could aim to reduce risk behaviours through providing psychoeducation about mental health and help-seeking (Scheel & Westefeld, 1999; Young et al, 2014); engaging families in support programmes/interventions (Fortune, Cottrell, & Fife, 2016) or running groups on problem solving, self-efficacy and skills training (e.g. emotional regulation; Booth, Keogh, Doyle, & Owens, 2014; Sambrook, Abba, & Chadwick, 2007). Working directly with alternative youths might involve developing interventions that build on existing identities, for example

being creative in approach, potentially involving music in interventions (Lacourse et al., 2001; Young et al., 2014). This may aid engagement, open up communication and avoid stigma. These findings have clinical implications for services who need to respond to the varied needs of such groups. Failure to do so could result in lack of recognition of mental health and risk behaviours (Cooper et al., 2010).

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## **Chapter 2: Empirical Paper**

**Is affiliation with alternative subcultures associated with self-harm? <sup>2</sup>**

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<sup>2</sup> For submission to the British Journal of Clinical Psychology (5000 word limit excluding abstract, tables, figures and references); Appendix A

## Abstract

Self-harm, including Non-Suicidal Self-Injury (NSSI), rates are elevated in adolescents and young adults, particularly in some minority groups including those with alternative subculture affiliations (e.g. Goth). However, little is known about the mechanisms through which this affiliation confers greater risk of self-harm. **Objectives:** This study aimed to investigate the association between alternative subcultures and NSSI, and explore four variables that may explain this association: emotion dysregulation, depression, identity confusion and exposure to peers' self-harm. **Design:** Online cross-sectional study. **Methods:** Participants ( $N=167$ ) between the ages of 16 – 25 years were recruited to take part in an online UK study. **Results:** Alternative subcultures (Goth/Metal and Emo/Punk) were found to be at a greater risk of NSSI to those affiliated to other subcultures. This effect reduced when covariates were accounted for, though a trend remained for the Goth/Metal group. Emotion dysregulation was the only variable that remained associated with NSSI. **Conclusions:** Emotion dysregulation is a key predictor of NSSI, and is likely to be related to the increase in NSSI in those who affiliate with alternative subcultures. Further research is required to gain a greater understanding of the mechanisms that underlie NSSI in this population. Methodological limitations, suggestions for future research and clinical implications are discussed.

*Keywords:* Non-suicidal self-injury (NSSI), alternative subculture, Goth, young people, online

## **Practitioner points**

- Young people who affiliate with alternative subcultures, in particular Goth or Metal, are likely to present with a greater risk of NSSI to those who affiliate with other subcultures. Increasing the awareness of the potential risk of NSSI in this population, by training or consultation in schools and clinical services, would increase early identification of any risk.
- Emotion dysregulation is a key predictor of NSSI in alternative subcultures, and therefore interventions that focus on emotion regulation should be considered for this population.
- Further exploration of the mechanisms underlying the relationship between alternative subculture affiliation and NSSI is required.
- Longitudinal research should explore the relationship between alternative affiliation and NSSI to add to the understanding of the direction of the effect.

## Introduction

Self-harm has been described as a major public health concern that is thought to be on the rise (Fortune & Hawton, 2005; Klonsky, 2007; O'Connor, Ramussen, & Hawton, 2012). It affects around four in every 1,000 people in the UK each year (Winter, Sireling, Riley, Metcalfe, Quait, & Bhandari, 2007) with the phenomenon being more prevalent in young people with rates of 7-14% in the UK (Hawton & James, 2005; Skegg, 2005; Swannell, Martin, Page, Hasking, & St John, 2014). Non-suicidal self-injury (NSSI) is a form of self-harm that is defined as the deliberate damage to one's own body without suicidal intent (Klonsky, 2007) and can include cutting, scratching, burning and poisoning (Cassels & Wilkinson, 2016; Klonsky, 2007; Rodham & Hawton, 2009). The prevalence of NSSI is highest in adolescents and young adults, with rates of 13% and 17% in community samples in comparison to 6% of adults (Swannell et al., 2014).

NSSI is associated with potentially serious and debilitating physical health consequences, such as organ damage, scarring (Cassels & Wilkinson, 2016) and accidental death (Kehrberg, 1997). Furthermore, NSSI has also been associated with mental health difficulties such as anxiety and depression (Brown & Plener, 2017; Mangnall & Yurkovich, 2008). NSSI has been found to increase the risk of suicidal behaviours (Fox, Franklin, Ribeiro, Kleiman, Bentley, & Nock, 2015; Hamza, Stewart, & Willoughby, 2012; Victor & Klonsky, 2014) and is one of the strongest predictors of suicide (Hawton & Harriss, 2007; Hawton, Zahl, & Weatherall, 2003).

The literature suggests that minority groups including Lesbian Gay Bisexual and Transgender (LGBT; Jackman, Honig, & Bockting, 2016; King et al., 2008) and ethnic minorities (Bhui, McKenzie, & Rasul, 2007; Cooper et al., 2010) may be at increased risk of self-harm, including NSSI. More recently, investigations into social minority groups

suggested that identification with alternative subcultures, in particular “Goth” culture, and preference for alternative music, is another predictor for self-harm (Bowes et al., 2015; Burge, Goldblat & Lester; 2010; Lacourse, Claes, & Villeneuve, 2001; Lester & Whipple, 1996; Martin, Clarke, & Pearce, 1993; Rutledge, Rimer, & Scott, 2008; Scheel & Westefeld, 1999; Sweeting, West, Young, & Der G, 2010; Young, Sproeber, Groschwitz, Preiss, & Plener, 2014; Young, Sweeting, & West, 2006), however the research is sparse and has methodological limitations. Inadequate descriptions of recruitment methodology and sample characteristics and a lack of validated tools to measure constructs and outcomes limits the reliability and validity of the results. Furthermore, many previous studies have recruited low numbers of participants who have identified with alternative subcultures or who have reported self-harm (e.g. less than 10% of the sample). The previous literature mainly focused on the associations between alternative subculture affiliation and self-harm, with few studies investigating the mechanisms underlying the association, therefore the reasons why certain youth subcultures are more likely to self-harm remain unclear (Young et al., 2014).

The current study proposes an explicit model of how affiliation with an alternative subculture may be linked to NSSI. Figure 2 highlights four variables that are hypothesised to contribute to this association; emotion dysregulation, depression, identity confusion and exposure to peers’ self-harm. This model will be tested in the current study.

Emotion dysregulation is associated with NSSI across multiple studies (Gratz, 2003; Gratz, 2006; Gratz & Roemer, 2008; Klonsky, 2007; Lynch & Cozza, 2009) and the function of NSSI is often to regulate aversive and overwhelming emotions (Andover & Morris, 2014; Edmondson, Brennan, & House, 2016) and gain relief from these (Cassels & Wilkinson, 2016). Depression is also associated with NSSI (Asmnow et al., 2011; García-Nieto, Carballo, Díaz de Neira Hernando, de León-Martinez, & Baca-García, 2015; Hawton, Rodham, Evans, & Weatherall, 2002), and predicts the occurrence of NSSI over time

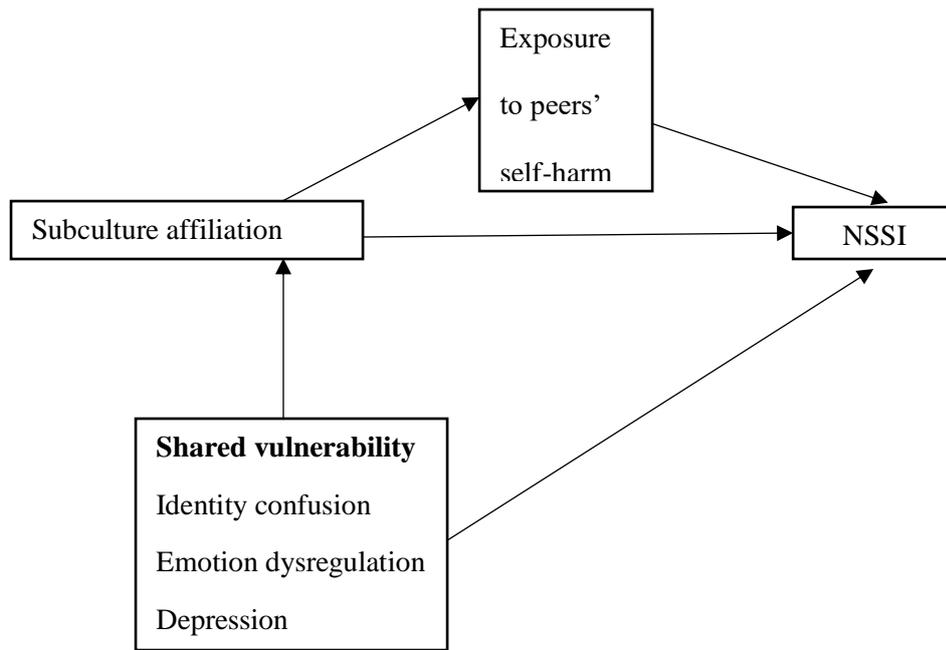
(Barrocas, Giletta, Hankin, Prinstein, & Abela, 2015; Wilcox, Arria, Caldeira, Vincent, Pinchevsky, & O'Grady, 2012). NSSI may provide immediate relief from dysphoria and low mood or an escape from problems underlying depression (Gledhill & Hodes, 2008). There is evidence that those who identify as “alternative” also report elevated depression and the use of NSSI to regulate their emotions (Bowes et al., 2015; Young et al., 2014). Young people who struggle to regulate their mood may seek out peers from alternative subcultures, who have similar difficulties to them, who can validate their experiences through music lyrics. The relationship between alternative subculture affiliation and NSSI may therefore be partially or fully accounted for by these shared vulnerability factors.

It has been suggested that the establishment of a sense of self or personal identity is a critical stage of adolescence (Erikson, 1968; Harter, 1999; Klimstra, 2013; Luyckx, Klimstra, Duriez, Van Petegem, & Beyers, 2013). The motivation to belong to a peer group and feel accepted could lead to identification with alternative subcultures, especially where adolescents feel excluded from mainstream culture (McNeely & Blanchard, 2010). However, young people who are more confused about their identity are also more vulnerable to NSSI (Claes, Luyckx, & Bijttebier, 2014), with NSSI possibly being a method of coping with identity crisis or difficulties in reaching identity formation (Gandhi, Luyckx, Maitra, Kiekens, Verschueren, & Claes, 2017). Thus, co-occurring identity confusion may also account for any association between alternative subculture affiliation and NSSI.

Drawing on the model, a further hypothesis is that social exposure to peers' self-harm within alternative subcultures will mediate the relationship between affiliation with the subculture and NSSI. The general literature suggests that exposure to the suicide, self-harm or NSSI of others can increase the risk of NSSI in young people (Hawton & James, 2005; Heath, Ross, Toste, Charlebois, & Nedecheva, 2009; Hu, Li, Glauert, & Taylor, 2017; Muehlenkamp, Brausch, Quigley, & Whitlock, 2013; Zhu et al., 2016). A higher prevalence

of NSSI in alternative subcultures may therefore be related to the modelling of self-harm by icons or peers (Bandura, 1986; Hawton et al., 2002; Prinstein & Dodge, 2008).

Despite advances in our knowledge, and more specific hypotheses, there remains a lack of understanding of the mechanisms underlying the increased prevalence of NSSI in young people belonging to alternative subcultures. This research seeks to improve our understanding of the relationship between alternative youth subcultures and NSSI, investigating a series of putative explanatory mechanisms. These include the relationship between alternative subculture and NSSI being due to the overlap with other NSSI risk factors (depression, emotion dysregulation, identity confusion), and the relationship between alternative subculture and NSSI being mediated by exposure to peers' self-harm.



*Figure 2.* Hypothesised model of the factors that may explain risk of NSSI in alternative subcultures.

## Method

### Participants

Participants were recruited using a convenience sampling method over a 12-month period, from January to December 2016. Participants were eligible to take part in the study if they met the following criteria; a) between the ages of 16 to 25 years (as this is the period where affiliation with social groups becomes increasingly important to the development of self-concept; McNeely & Blanchard, 2010), b) adequate English and literacy abilities to respond to the questionnaires, and c) internet use to access the materials. Both people who did and did not self-harm were recruited and who did and did not self-identify with an alternative subculture. This was emphasised in the participant information sheet. One hundred and sixty-seven participants were recruited to take part in the study (134 females, 28 males, 5 transgender) between the ages of 16 – 25 years (Mean = 20.93 years, *SD* = 2.64).

### Measures

**Demographic information.** Data was collected on age, sex, ethnicity, employment status, previous/current contact with mental health services and past/current substance use (Appendix D).

**Social identity.** As there is no existing validated measure for subculture identities, this was determined through developing a list of current “social groups”, devised from consultation with experts by experience (young people with/without lived experience of self-harm) and drawing on previous literature (Young et al., 2014). The consultations involved discussions of the experiences and observations of young people who did and did not self-identify as alternative with regard to social groups that exist today. This list was then

narrowed down to reflect the most popular observations which included fifteen groups and an additional “other” category: Metalhead, Goth, Mosher, Scenekid, Punk, Emo, Indie, Gamer, Cosplay/Anime, Nerd/Geek, Sporty, Popular, Clubber, Reggae, Skater. Participants were asked how much they identify with different youth subcultures using a 5-point identity scale (Appendix E). Participants were given the option to note an additional group if it was not listed. Group affiliation was measured on a continuum, rather than categorically, to allow for individuals to relate to a range of social groups, seen as an important and realistic way to measure group identity, whilst it is forming (Erikson, 1968).

**Non-suicidal self-injury.** The Inventory of Statements about Self-injury (ISAS; Klonsky & Glenn, 2009) is a self-report measure which assesses the frequency and function of NSSI (Appendix F). It measures lifetime prevalence of 12 different NSSI behaviours including cutting, burning and scratching. The ISAS has been validated in non-clinical samples of young adults and has been found to have high internal consistency ( $\alpha = .93$ ) and construct validity (Klonsky & Glenn, 2009). In order to make this measure accessible for the younger ages within the sample, the word “endorse” was replaced with the word “report” to enhance understanding. It is thought that this will have no impact on the validation of the findings. For this study, lifetime NSSI was coded dichotomously as 1 = present 0 = absent.

**Exposure to self-harm.** The question, “Have any of your friends ever hurt themselves on purpose?” was used to measure this concept. The question has face validity and has been previously used where it has demonstrated expected relationships with self-harm (Hasking, Andrews, & Martin, 2013).

**Emotional regulation.** The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a 36-item measure that assesses emotional dysregulation across six separate domains (Appendix G). The DERS has high internal consistency ( $\alpha = .93$ ), good test-retest reliability, and adequate construct and predictive validity (Gratz & Roemer, 2004).

The scale has been validated with both adult (Gratz & Roemer, 2004) and adolescent populations (Weinberg & Klonsky, 2009). The measure provides six subscale scores and a total score. In the current study, the DERS total score was used, and had good internal consistency ( $\alpha = .96$ ).

**Identity confusion.** The identity subscales of the Erikson Psychosocial Stage Inventory (EPSI; Rosenthal, Gurney, & Moore, 1981) is made up of 12 items to measure identity confusion and identity synthesis, which is the extent to which participants have a clear sense of who they are and what they believe in (Appendix H). Items from this scale include “I like myself and am proud of what I stand for” (identity synthesis) and “I feel mixed up” (identity confusion). The subscales have good validity and reliability ( $\alpha = .82$ ; Schwartz, Zamboanga, Wang, & Olthuis, 2009) and have been used with both adolescents (Rosenthal et al., 1981) and adults (Leidy & Darling-Fisher, 1995). In the current study the EPSI had good internal consistency ( $\alpha = .87$ ).

**Anxiety, depression and stress.** The Depression Anxiety Stress Scales -21 (DASS-21; Lovibond & Lovibond, 1995) are well-established brief scales (21 items; Appendix I) with good psychometric properties ( $\alpha = .90$ ). Examples of questions included; “I felt scared without any good reason” (anxiety subscale), “I felt that I had nothing to look forward to” (depression subscale) and “I found it hard to wind down” (stress subscale). They were developed for use with non-clinical samples though have since shown internal consistency and convergent validity in clinical samples also (Weiss, Aderka, Lee, Beard, & Björngvinsson, 2015). They are appropriate for use with both adolescents and adults (Lovibond & Lovibond, 1995) in a number of westernised cultures (Oei, Sawang, Goh, & Mukhtar, 2013). In the current study the DASS-21 had good internal consistency ( $\alpha = .96$ ).

## **Power**

A power calculation using G\*power (Faul, Erdfelder, Lang, & Buchner, 2007) suggested that 161 participants would be required for a logistic regression analysis with three predictors with an estimated 0.2 overlap between variables (assuming  $OR = 2$ , power of 80%). Furthermore, Fritz and Mackinnon (2007) suggest 148 participants are required to test for a single mediated effect (moderate effect size, power of 80%) using bias corrected bootstrapping.

## **Ethical Approval**

Ethical approval was granted by the host Universities Research Ethics Committee (Appendix J).

## **Procedure**

The aim of the research was to actively test a series of theorised models, therefore a quantitative design was adopted to fit this purpose. The study was cross-sectional using an online survey. Multiple sources were used to recruit participants to ensure a diverse sample with a focus on over-sampling alternative subcultures and those who self-harm to ensure these groups were adequately represented in the data. An advert for the study (Appendix K) was circulated electronically and in person to students of several departments of a Northern University in England; to special interest groups (e.g. Goth community groups in North West England), self-harm specific websites and community support groups; and to schools and colleges. These organisations posted adverts on their websites and notice boards and distributed fliers to potential participants. Furthermore, the researcher advertised the study in

person, via a training event at a college and regularly posted details of the study on social media (e.g. Facebook and Twitter).

Interested participants followed the link provided in the advertising material, which directed them to the participant information sheet (Appendix L), allowing participants to make an informed choice about taking part prior to completing a consent form (Appendix M). Participants then completed the online survey, which took approximately 20-40 minutes, and were directed to debriefing information (Appendix N) following completion. Participants were given the option to be entered into a prize draw to win one of three £50 vouchers. Details of ethical considerations regarding recruitment are highlighted in Appendix O.

## **Data Analysis**

Data was analysed using the Statistical Package for Social Sciences 22 (SPSS 22; IBM Corp, 2013) and STATA 14 (StataCorp, 2015). Principle components analysis (PCA) was used to reduce the number of alternative subculture dimensions by identifying overlapping dimensions that could be combined or summed together. Parallel analysis was used to determine the number of components to extract from the PCA (Ledesma & Valero-Mora, 2007). This method creates a random dataset with the same number of observations as the original dataset and estimates eigenvalues. If the eigenvalues from the random dataset are larger than those generated from the PCA, this suggests factors account for no more variance in items that may be expected by chance and as such not retained. Eigenvalues from the PCA that are greater than those generated from a parallel analysis are retained in the analysis (Ledesma & Valero-Mora, 2007). Summed totals of subculture dimensions were used rather than estimating factor scores, due to the indeterminacy problems associated with factor scores (Grice, 2001). Group comparisons were undertaken using a Mann-Whitney test, due to the data violating assumptions for parametric testing (i.e. positively skewed data for all social

groups with some leptokurtic distributions for Goth/Metal, Emo/Punk and Gamer/Nerd group). Spearman's correlations were performed to explore the relationships between the predictor variables of NSSI. Logistic regression was used to test the association between multiple predictors and lifetime NSSI (1 = present). Appendix P presents additional information on the assumptions for the statistical analyses undertaken.

## Results

### Missing Data

Initially 182 participants consented to completing the research. Of these, 15 cases were excluded; nine had largely incomplete datasets (e.g. had only completed the demographic questions), three did not meet the age criteria and three presented responses that could not be understood on the NSSI measure. The remaining cases that had completed the demographic variables, social identity measure and who had responded to part 1 of the ISAS (NSSI measure) were included in the analysis. Of these 167 cases, 143 had complete data on all variables. Of the remaining cases, missing data ranged from 0-13.8% per variable, with the DASS 21 (last scale of the survey) having the largest amount missing. The most common pattern of missing data was individuals stopping the survey early, and therefore not completing full scales. Little's MCAR test indicated that data was missing completely at random (MCAR) ( $X^2 = 20.31$ ,  $df(21)$ ,  $p = .501$ ). Small amounts of items missing from subscales (e.g. where there was only one item missing) was managed using single item mean imputation to get total scores. This is suggested to be appropriate for small amounts of missing data spread across the dataset, creating a minor negative impact on estimations

(Dodeen, 2003; Schafer & Graham, 2002). Further missing data was handled using casewise deletion.

### **Participant Characteristics**

Table 3 describes the demographic characteristics of the participants who took part in the study. Sixty-nine percent of the sample reported having used NSSI at some point in their lives.

Table 3

*Descriptive Statistics of the Sample (N=167)*

		NSSI	No NSSI
		(n = 115)	(n = 52)
Sample characteristics	n (%)	(%)	(%)
<b>Gender</b>			
Male	28 (16.8)	14 (50.0)	14 (50.0)
Female	134 (80.2)	96 (71.6)	38 (28.4)
Transgender	5 (3.0)	5 (100)	0 (0)
<b>Ethnicity</b>			
White British	126 (75.4)	88 (69.8)	38 (30.2)
Other White background	18 (10.8)	12 (66.7)	6 (33.3)
Asian British	3 (1.8)	2 (66.7)	1 (33.3)
Indian	3 (1.8)	2 (66.7)	1 (33.3)
Chinese	4 (2.4)	2 (50.0)	2 (50.0)
Black/Black British	3 (1.8)	2 (66.7)	1 (33.3)
Mixed	7 (4.2)	5 (71.4)	2 (28.6)
Other	3 (1.8)	2 (66.7)	1 (33.3)
<b>Employment</b>			
Employed	24 (14.4)	16 (66.7)	8 (33.3)
Unemployed	3 (1.8)	3 (100)	0 (0)
Student	136 (81.4)	92(67.6)	44 (32.4)
Other	4 (2.4)	4 (100)	0 (0)

		NSSI	No NSSI
		( <i>n</i> = 115)	( <i>n</i> = 52)
Sample characteristics	<i>n</i> (%)	(%)	(%)
<b>Mental health input</b>			
Yes – current input	28 (16.8)	27 (96.4)	1(3.6)
Yes – previous input	46 (27.5)	42(91.3)	4 (8.7)
No contact	93 (55.7)	46(49.5)	47 (50.5)
<b>Substance use (drugs and/or alcohol)</b>			
Yes – current or previous use	128 (76.6)	88 (68.8)	40 (31.3)
No use	39 (23.4)	27 (69.2)	12 (30.8)

## Principal Components Analysis (PCA)

PCA was used to identify common components underlying the fifteen subculture affiliation dimensions. The Kaiser-Meyer-Olkin statistic (.77) suggested items were appropriately inter-correlated for PCA. Parallel analysis resulted in adjusted eigenvalues (3.76, 1.44, 1.20, 1.16, 0.87) which explained the difference between eigenvalues in the study and the average eigenvalues from a random dataset, and indicated that four factors would be suitable for the analysis. The unadjusted eigenvalues for the four factors included in the PCA were: 4.25, 1.83, 1.53, 1.40. A promax rotation method was used to allow inter-correlated components. Table 4 presents the factor loadings of the four scales that were retained as subscales.

Component 1 (labelled Goth/Metal) included the subcultures Goth, Metalhead and Mosher. Component 2 (labelled Emo/Punk) included those who identified as Scenekids, Punk, Emo and Indie. Component 3 (labelled Gamer/Nerd) was made up of the subcultures titled Gamer, Cosplay/Anime and Nerd/Geek and Component 4 (labelled Popular/Sporty) encompassed those who identified as being Sporty, Popular, a Clubber, Reggae or a Skater. All items had standardized loadings over .40 suggesting adequate shared variance with the component (Costello & Osborne, 2005). The subcultures Goth/Metal and Emo/Punk were characterised as *alternative* and Gamer/Nerd and Sporty/Popular as *non-alternative*, as suggested in the literature (Young et al., 2014).

Table 4

*Rotated Factor Loadings from a Principle Component Analysis (PCA)*

Subculture (%)	Goth/Metal	Emo/Punk	Gamer/Nerd	Popular/Sporty
Metalhead (18.9)	<b>.89</b>	.01	-.01	-.03
Goth (18.1)	<b>.85</b>	.11	-.06	-.05
Mosher (16.2)	<b>.77</b>	.14	.01	-.00
Scenekid (12.6)	-.07	<b>.77</b>	.27	-.08
Punk (31.7)	.23	<b>.76</b>	-.05	.09
Emo (30.5)	.17	<b>.72</b>	.01	-.06
Indie (58.7)	-.08	<b>.57</b>	-.22	.37
Gamer (38.3)	-.07	.01	<b>.89</b>	.09
Cosplay/anime (19.2)	-.22	.47	<b>.69</b>	-.06
Nerd/geek (71.7)	.22	-.07	<b>.64</b>	.10
Sporty (46.1)	-.04	-.24	.36	<b>.69</b>
Popular (53.3)	-.05	.00	-.17	<b>.61</b>
Clubber (40.7)	-.16	.14	-.35	<b>.56</b>
Reggae (20.4)	.04	.16	.10	<b>.48</b>
Skater (12.0)	.41	-.06	.22	<b>.47</b>

*Note.* % is the percentage of all participants that reported at least “mildly” identifying with that subculture.

Few participants reported a strong affiliation to any subculture, with large numbers reporting no affiliation to the groups listed. Stronger affiliation appeared to lie with non-alternative groups, for example Nerd/Geek (71.7%), Indie (58.7%) and Popular (53.3%).

### **Relationships between Affiliation to Subcultures and NSSI**

Table 5 presents comparisons between the NSSI and no NSSI groups across the four subculture variables, from Mann-Whitney tests. The subculture variables were measured on a continuum, therefore higher scores represent greater affiliation with the subculture and lower scores less affiliation. The two alternative groups (Goth/Metal and Emo/Punk) were significantly more highly endorsed amongst those with a history of NSSI than those without, with small to medium effect sizes.

Table 5

*Mann-Whitney Test Results: Comparing NSSI and no NSSI across the Subculture Variables*

(*N* = 167)

Variable	<i>M</i>	<i>SD</i>	<i>Mdn</i> (min/max)	Cohen's <i>d</i>
<b>Goth/Metal</b>				
NSSI	4.14***	2.14	3.0 (3.0, 12.0)	0.51
No NSSI	3.19***	0.89	3.0 (3.0, 9.0)	
<b>Emo/Punk</b>				
NSSI	6.37*	2.53	6.0 (4.0, 18.0)	0.33
No NSSI	5.58*	2.18	5.0 (4.0, 13.0)	
<b>Gamer/Nerd</b>				
NSSI	5.94	2.87	5.0 (3.0, 15.0)	0.23
No NSSI	5.31	2.62	5.0 (3.0, 13.0)	
<b>Popular/Sporty</b>				
NSSI	7.46	2.23	7.0 (5.0, 15.0)	-0.38
No NSSI	8.37	2.81	8.0 (5.0, 15.0)	

*Note.* \*  $p < .05$ . \*\*\*  $p < .001$ .

### **Correlations between Predictor Variables**

Alternative affiliation only (Goth/Metal and Emo/Punk) will be included in the remaining analyses as it was found that non-alternative subculture affiliations (Gamer/Nerd and Popular/Sporty) had non-significant associations with NSSI. Spearman's correlations were performed to explore the relationships between the predictor variables of NSSI. As indicated in Table 6, there were some moderate to strong relationships between the predictor variables; emotion dysregulation, identity confusion and depression. Alternative affiliation was unrelated to identity confusion but positively associated with emotional dysregulation and depression, though these associations were small.

Table 6

*Correlation Matrix of Predictor Variables of NSSI*

Variable	1	2	3	4	5
1. Goth/Metal group	-				
2. Emo/Punk Group	.46**	-			
3. Emotional dysregulation	.23**	.19*	-		
4. Identity	-.14	-.16	-.63**	-	
5. Depression	.21*	.19*	.72**	-.66**	-

*Note.* \*  $p < .05$ . \*\*  $p < .01$ .  $n = 143 - 167$ .

## **Relationships between Alternative Affiliation and NSSI**

A logistic regression was carried out to establish if the bivariate associations between alternative affiliation and NSSI held whilst adjusting for potential confounding variables including emotional dysregulation, depression and identity confusion. Inspection of the variation inflation factor (VIF; all less than 10) and tolerance values (higher than 0.2) indicated multi-collinearity was not a concern (Field, 2005). Graphing a component-plus-residual plot on STATA (Jann, 2008) showed no evidence of non-linear relationships between predictors and NSSI, therefore the assumptions for a logistic regression were met.

An initial test of the full model against a constant only model was statistically significant,  $X^2(5) = 66.34, p < .001$ , suggestive of some predictive capacity, which is supported further by the non-significant value from Hosmer and Lemeshow's test,  $X^2(8) = 8.90, p > .05$ ). Parameter estimates from the model are reported in Table 7. When other variables were introduced into the analysis, neither alternative group predicted NSSI. The only significant predictor was emotion dysregulation, as this factor increased the odds that individuals endorsed NSSI increased.

Table 7

*Logistic Regression Results*

	Multivariate analysis (outcome NSSI)	Multivariate analysis with residual case removed (outcome NSSI)
	<i>OR</i> (95% CI)	<i>OR</i> (95% CI)
Predictors		
Goth/Metal	1.72 (0.93, 3.16)	4.73** (1.48, 15.15)
Emo/Punk	0.90 (0.73, 1.12)	0.89 (0.70, 1.12)
Emotion dysregulation	1.07*** (1.04, 1.11)	1.08*** (1.04, 1.12)
Identity	1.03 (0.96, 1.10)	1.04 (0.97, 1.11)
Depression	1.06 (0.94, 1.20)	1.09 (0.96, 1.25)

*Note.* \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Standardized residuals and influential statistics (including Cook’s distance and DFBeta) were explored to check if there were any extreme isolated data points that may have been influencing the model. One case was identified as having a potentially undue influence upon the model (Cooks distance = 2.94, standardized residual = -2.33, DFBeta = 2.00). When this case was omitted from the dataset and the analysis rerun, Goth/Metal affiliation became a significant predictor of NSSI,  $OR = 4.73$ , 95% CI [1.48, 15.15]. The results with the residual case removed are presented in Table 7. The excluded individual was in the top 96<sup>th</sup> percentile for Goth/Metal affiliation but they were the only person with this level of affiliation or higher to not report NSSI.

Figures 3 and 4 demonstrate that whilst in the NSSI group, there are some participants who identify more so with the Goth/Metal subculture, the distribution is more truncated for the group that do not report NSSI. In other words no individuals without NSSI reported Goth/Metal affiliation above 5 (with the exception of the one outlying participant).

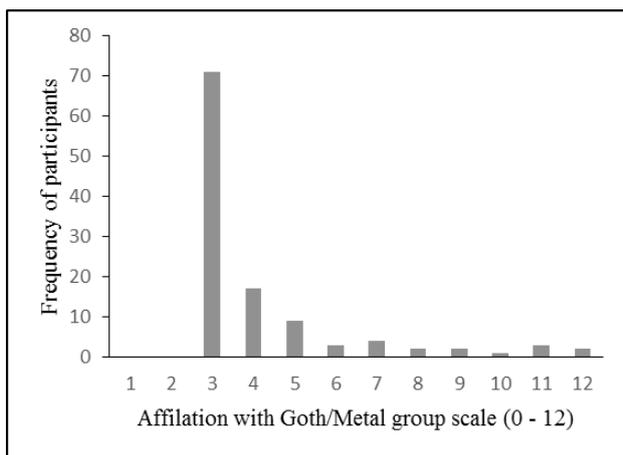


Figure 3. Distribution of participants’ who affiliated with the Goth/Metal subculture and reported NSSI

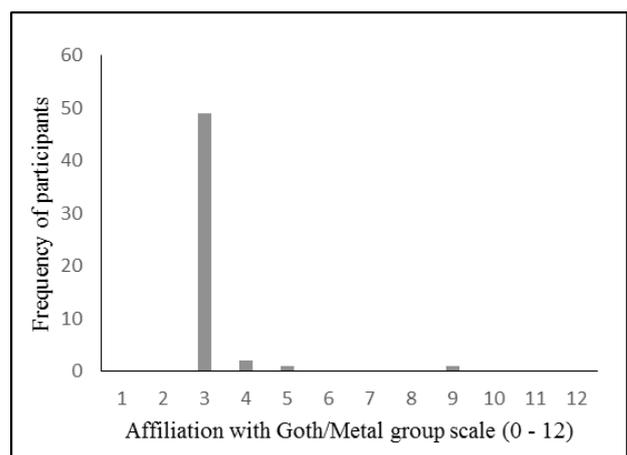


Figure 4. Distribution of participants’ who affiliated with the Goth/Metal subculture and reported no NSSI

## **Relationship between Exposure to Self-Harm and NSSI in Alternative Subcultures**

An additional hypothesis was whether exposure to self-harm would mediate the relationship between alternative subgroup affiliation and NSSI. As an initial step, the association between alternative subculture affiliation (Goth/Metal and Emo/Punk) and exposure to self-harm was tested, using a univariate logistic regression. As no significant relationship was found, with a small effect size, (Goth/Metal;  $OR = 1.13$ , 95% CI [0.90, 1.41]; Emo/Punk;  $OR = 1.16$ , 95% CI [0.97, 1.38]) this mediation analysis was not followed up.

## **Discussion**

The aim of the current research was to increase our understanding of the relationship between affiliation with alternative youth subcultures and NSSI, specifically investigating the extent to which emotion dysregulation, depression and identity confusion can predict NSSI in these subcultures. Furthermore, an additional hypothesis was that exposure to peers' self-harm within alternative subcultures may mediate the association between affiliation and NSSI, as presented in Figure 2. Findings were similar to previous research (Bowes et al., 2015; Young et al., 2006; Young et al., 2014), that young people who classified as alternative (Goth/Metal and Emo/Punk) had higher reports of NSSI than controls. Within these groups there was little difference between young people identifying as Goth/Metal ( $d = 0.51$ ) or Emo/Punk ( $d = 0.33$ ). When the emotion dysregulation variable was included in the model as a covariate, the effect of both the alternative groups reduced, however a trend remained for the Goth/Metal group. This effect became stronger when one outlier case was removed from the analysis, suggesting that the association of Goth/Metal subculture affiliation and NSSI can partly be accounted for by emotional dysregulation, but cannot entirely be explained by this variable, presenting some evidence for an alternative affiliation effect on NSSI. The true

size of the relationship between Goth/metal affiliation and NSSI is unclear because of the influential case, and may range between  $OR = 0.93$  and  $OR = 15.15$ .

Drawing on the latter finding in relation to the residual outlier, this result must be interpreted with caution. It is possible that the Goth/Metal group do have a relationship with NSSI, with this outlier portraying an unusual or unreliable case. However, it is equally possible that this case is reflective of other individuals' experiences that have not been captured by the research. This outlier may be the consequence of relatively small numbers of those who identified highly with an alternative subculture in the sample. Previous research in this area has experienced similar issues (Young et al., 2006; Young et al., 2014). Further studies with larger samples of individuals who identify with alternative subcultures would help to clarify this issue.

The finding that emotion dysregulation was a consistent predictor of NSSI is consistent with the evidence base (Favazza, 1998; Gratz, 2003; Gratz, 2007; Gratz & Roemer, 2004; Gratz & Roemer, 2008; Klonsky, 2007; Nock & Prinstein, 2005). However, in contrast to previous research, there were no significant findings with regard to the contribution of depression (Hawton et al., 2002) or identity confusion (Claes et al., 2014; Gandhi et al., 2017) to NSSI. There was no relationship between alternative affiliation and exposure to self-harm indicating no difference in being exposed to the phenomena within these subcultures. This finding does not support the proposed mechanism that modelling the behaviour of peers (Bandura, 1986; Young et al., 2014) or social contagion (Young et al., 2006) underlies the increased risk of NSSI in these subcultures.

Affiliation to alternative subcultures was only mildly associated with difficulties around low mood, identity and emotion dysregulation. The data therefore does not support the hypothesis that these groups may have some shared vulnerability factors in these

variables that could predispose them to NSSI. The cross-sectional design of this study prevents any conclusion around the direction of relationships, and so it is unclear whether NSSI leads to or results from affiliation to alternative subcultures. However, a longitudinal study (Bowes et al., 2015) provides preliminary evidence that Goth affiliation pre-empts self-harm (they did not look at NSSI specifically). Further research is required in identifying the mechanisms that are involved in the relationship between affiliation with alternative subcultures and NSSI, including longitudinal studies to increase the understanding of the direction of effect, found by previous research (Bowes et al., 2015). The current model focused on key theorised mechanisms, but was unable to include all potentially important variables. Therefore, there is scope for future research to investigate the influence of additional variables that may explain heightened risk of NSSI in those with greater subculture affiliation including adverse experiences (e.g. hate crime, victimisation or trauma), attachment difficulties, impulsivity or family dynamics (Fortune, Cottrell, & Fife, 2016; Garland & Hodkinson, 2014; Lockwood, Daley, Sayal, & Townsend, 2017). The sample size of the current study limited the number of variables that could reasonably be accommodated in the model.

There are a number of limitations of the present study that should be taken into account for future research. Firstly, no existing scale of subculture affiliation exists necessitating the development of such a scale for the current study. Although this was developed by drawing on previous research and consulting with young people about the subcultures that exist in the current social context, the absence of available psychometric properties may indicate potential problems with validity, for example important subcultures may have been neglected. Replication of this measure could add to the validity of the tool. A difficulty with this would be that social identity is dependent on context and so may differ between countries and change over time, making it a difficult concept to reliably measure.

Additionally, the current study used a single item to measure exposure to peer self-harm and as such limits content validity, therefore a more comprehensive measure may enhance understanding in this area. Secondly, whilst the current study was designed to recruit young people from a range of contexts, the large majority of the sample were white British students, who were predominantly female, which limits the generalisability of the findings. Therefore, a more diverse sample is required to add to the literature. Thirdly, as study information described the focus of the research, there is a risk that self-selection bias was present that may have inflated the association between subculture and NSSI (e.g. those affiliated with a specific subculture may have been more likely to take part if they also engage in NSSI because they see the project is about this). This possibility does not fully explain the results, since the study was framed as being about subculture affiliation broadly (and data does not suggest a particular subculture were more likely to take part), and yet the association with NSSI emerged more strongly for specific subculture dimensions. Nonetheless, incorporating measures of subculture affiliation into surveys with more representative sampling approaches would be beneficial.

This current study is unique in that it presents group affiliation on a continuum, rather than it being measured in a categorical way. This allows for individuals to relate to a range of subcultures (Burge et al., 2010; Lester & Whipple, 1996; Martin et al., 1993; Scheel & Westefeld, 1999). The finding that few people scored highly on any subculture could be reflective of the study failing to recruit those at higher ends of the scale, or the reality that young people have not defined themselves in this way. The current study recruited a large number of young people who identified as alternative in comparison to previous research, though future work could purposively recruit a subsample based solely on affiliation with alternative subcultures.

The current research aimed to add to the understanding of the relationship between affiliation with alternative subcultures and NSSI. The finding that the Goth/Metal group possibly present with a higher risk of NSSI has clinical implications for services. It will be important to raise awareness of the increased risk that this subculture in particular may face and possible ways that services can intervene. Increasing the awareness of the potential risk of NSSI in this population, by training or consultation in schools, colleges and universities and clinical services would increase early identification of any risk. However, this study found small (Emo/Punk) to medium (Goth/Metal) effect sizes only in alternative subcultures, therefore caution should be taken not to make assumptions of risk. It is likely that most individuals who affiliate with alternative subcultures do not endorse NSSI. Importantly, emotion dysregulation was found to be a key variable that predicted NSSI, therefore supporting the use of interventions that focus on emotion regulation for those who struggle with NSSI, for example Dialectical Behavioural Therapy (DBT; Linehan, 1993) might be suitable.

The present study contributes to the small evidence base of research in this field in relation to group identity and self-harm; however further research is required to fully understand the mechanisms underlying NSSI in alternative subcultures. The current research replicates some earlier research findings and presents some null findings for further hypothesised predictors in relation to NSSI. Moreover, it directs areas for further research and practical implications for services.

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# **Appendices**

## *Appendix A*

### Author Guidelines for the British Journal of Clinical Psychology

The British Journal of Clinical Psychology publishes original contributions to scientific knowledge in clinical psychology. This includes descriptive comparisons, as well as studies of the assessment, aetiology and treatment of people with a wide range of psychological problems in all age groups and settings. The level of analysis of studies ranges from biological influences on individual behaviour through to studies of psychological interventions and treatments on individuals, dyads, families and groups, to investigations of the relationships between explicitly social and psychological levels of analysis.

All papers published in The British Journal of Clinical Psychology are eligible for Panel A: Psychology, Psychiatry and Neuroscience in the Research Excellence Framework (REF).

The following types of paper are invited:

- Papers reporting original empirical investigations
- Theoretical papers, provided that these are sufficiently related to the empirical data
- Review articles which need not be exhaustive but which should give an interpretation of the state of the research in a given field and, where appropriate, identify its clinical implications
- Brief reports and comments

#### 1. Circulation

The circulation of the Journal is worldwide. Papers are invited and encouraged from authors throughout the world.

#### 2. Length

The word limit for papers submitted for consideration to BJCP is 5000 words and any papers that are over this word limit will be returned to the authors. The word limit does not include the abstract, reference list, figures, or tables. Appendices however are included in the word limit. The Editors retain discretion to publish papers beyond this length in cases where the clear and concise expression of the scientific content requires greater length. In such a case, the authors should contact the Editors before submission of the paper.

#### 3. Submission and reviewing

All manuscripts must be submitted via Editorial Manager. The Journal operates a policy of anonymous (double blind) peer review. We also operate a triage process in which submissions that are out of scope or otherwise inappropriate will be rejected by the editors without external peer review to avoid unnecessary delays. Before submitting, please read the

terms and conditions of submission and the declaration of competing interests. You may also like to use the Submission Checklist to help you prepare your paper.

#### 4. Manuscript requirements

- Contributions must be typed in double spacing with wide margins. All sheets must be numbered.
- Manuscripts should be preceded by a title page which includes a full list of authors and their affiliations, as well as the corresponding author's contact details. You may like to use this template. When entering the author names into Editorial Manager, the corresponding author will be asked to provide a CRediT contributor role to classify the role that each author played in creating the manuscript. Please see the Project CRediT website for a list of roles.
- The main document must be anonymous. Please do not mention the authors' names or affiliations (including in the Method section) and refer to any previous work in the third person.
- Tables should be typed in double spacing, each on a separate page with a self-explanatory title. Tables should be comprehensible without reference to the text. They should be placed at the end of the manuscript but they must be mentioned in the text.
- Figures can be included at the end of the document or attached as separate files, carefully labelled in initial capital/lower case lettering with symbols in a form consistent with text use. Unnecessary background patterns, lines and shading should be avoided. Captions should be listed on a separate sheet. The resolution of digital images must be at least 300 dpi. All figures must be mentioned in the text.
- All papers must include a structured abstract of up to 250 words under the headings: Objectives, Methods, Results, Conclusions. Articles which report original scientific research should also include a heading 'Design' before 'Methods'. The 'Methods' section for systematic reviews and theoretical papers should include, as a minimum, a description of the methods the author(s) used to access the literature they drew upon. That is, the abstract should summarize the databases that were consulted and the search terms that were used.
- All Articles must include Practitioner Points – these are 2–4 bullet points to detail the positive clinical implications of the work, with a further 2–4 bullet points outlining cautions or limitations of the study. They should be placed below the abstract, with the heading 'Practitioner Points'.
- For reference citations, please use APA style. Particular care should be taken to ensure that references are accurate and complete. Give all journal titles in full and provide DOI numbers where possible for journal articles.
- SI units must be used for all measurements, rounded off to practical values if appropriate, with the imperial equivalent in parentheses.
- In normal circumstances, effect size should be incorporated.

- Authors are requested to avoid the use of sexist language.
- Authors are responsible for acquiring written permission to publish lengthy quotations, illustrations, etc. for which they do not own copyright. For guidelines on editorial style, please consult the APA Publication Manual published by the American Psychological Association.

#### 5. Brief reports and comments

These allow publication of research studies and theoretical, critical or review comments with an essential contribution to make. They should be limited to 2000 words, including references. The abstract should not exceed 120 words and should be structured under these headings: Objective, Method, Results, Conclusions. There should be no more than one table or figure, which should only be included if it conveys information more efficiently than the text. Title, author name and address are not included in the word limit.

#### 6. Supporting Information

BJC is happy to accept articles with supporting information supplied for online only publication. This may include appendices, supplementary figures, sound files, videoclips etc. These will be posted on Wiley Online Library with the article. The print version will have a note indicating that extra material is available online. Please indicate clearly on submission which material is for online only publication. Please note that extra online only material is published as supplied by the author in the same file format and is not copyedited or typeset. Further information about this service can be found at <http://authorservices.wiley.com/bauthor/suppmat.asp>

## Appendix B

### Pre-Registered Literature Review Protocol

#### **PROSPERO International prospective register of systematic reviews**

#### **Exploring the factors that contribute to an increased risk of self-harm and suicide in alternative subcultures: A systematic review**

*Mairead Hughes, Dr Peter Taylor, Dr Sue Knowles*

#### **Citation**

Mairead Hughes, Peter Taylor, Sue Knowles. Exploring the factors that contribute to an increased risk of self-harm and suicide in alternative subcultures: A systematic review.

PROSPERO 2017: CRD42016045402

Available from:

<https://www.crd.york.ac.uk/PROSPERO/printPDF.php?RecordID=45402&UserID=22813>

#### **Review question(s)**

What is the prevalence of self-harm and suicide in alternative subcultures?

What are the factors that put these groups 'at risk', taking into account both individual and group factors?

What protective factors exist for these groups?

#### **Searches**

We will search the following electronic databases: PsycINFO, Scopus, MEDLINE and Web of Science. The results are restricted to English language. Studies published up until the date the searches are run will be sought. The searches will be re-run just before the final analyses and further studies retrieved for inclusion. In addition to searching electronic databases, hand searches of references in eligible articles and key review articles will also be undertaken and corresponding authors of included papers will be contacted concerning any other published or unpublished studies that may be eligible for inclusion. Conference abstracts identified through the literature searches that appear potentially relevant will be followed up by contacting the authors/presenters and asking for any eligible published or unpublished research related to the abstract.

#### **Condition or domain being studied**

Self-harm; Alternative subcultures

#### **Participants/population**

Inclusion: Individuals (children and adults) that self identify as belonging to an alternative sub-culture

Exclusion: Individuals who do not identify as belonging to an alternative subculture.

#### **Intervention(s), exposure(s)**

The systematic review will be investigating factors that contribute to an increased risk of self harm and suicidal behaviours in alternative subcultures. The definitions below will be used to guide the search. Greater Manchester Police define alternative subculture as "...a broad term

to define a strong sense of collective identity and a set of group-specific values and tastes. This typically centres on distinctive style, clothing, make up, body art and music preference. Those involved usually stand out to both fellow participants and to those outside the group. Groups typically under the ‘alternative’ umbrella include Goths, Emos, Punks and Metallers...” (Greater Manchester Police, 2013). Self-harm (behaviour with the goal of producing physical tissue damage irrespective of suicidal intent) or self-harm cognitions (ideation, planning or reported intent to engage in self-harm) and/or suicidal thoughts, intent or acts are measured.

### **Comparator(s)/control**

For case-control studies both clinical (e.g., depression without self-harm) and non-clinical controls will be included.

### **Types of study to be included**

Included: Quantitative studies. Case-control, cohort, cross-sectional correlational, surveys and prospective designs. Intervention studies will be included where there are relevant baseline data or follow-up data in the control arm of the trial. Excluded: Experimental designs. Qualitative studies. Anything that is not new data (for example other reviews and editorials).

### **Context**

Mixed sample studies where over half of the sample does not belong to an alternative subculture will be excluded.

### **Primary outcome(s)**

Self-harm, self-injurious thoughts, suicidal behaviours and suicidal thoughts.

Self-harm (behaviour with the goal of producing physical tissue damage irrespective of suicidal intent) or self-harm cognitions (ideation, planning or reported intent to engage in self-harm) and/or suicidal thoughts, intent or acts are measured.

### **Secondary outcomes**

None

### **Data extraction (selection and coding)**

Titles and/or abstracts of studies retrieved using the search strategy and those from additional sources will be screened independently and those that clearly do not meet inclusion criteria will be excluded. Two reviewers will then use the inclusion and exclusion criteria outlined above to scrutinise the remaining full texts, excluding those that do not meet the criteria. For potentially relevant references from eligible articles, the same procedure will be applied. Any disagreement between them over the eligibility of particular studies will be resolved through discussion with a third reviewer. Data will then be extracted from the studies selected for the review. Extracted data will include study details (for example author, date, location, type of publication) sample characteristics, study design, tools used to measure self-harm/suicidal behaviour, risk factors and subgroup affiliation (e.g. means, standard deviations, correlations and regression weights where applicable). Two review authors will extract data independently, discrepancies will be identified and resolved through discussion (with a third author where necessary). Missing data will be requested from study authors.

**Risk of bias (quality) assessment**

Two review authors will independently assess the risk of bias using an adapted version of the Agency for Healthcare Research and Quality (AHRQ) assessment tool. This tool will assess included studies using the following criteria: Unbiased recruitment of cohort, Adequate description of cohort, Validated measure for determining self-harm and suicidal behaviour, Validated measure for ascertaining belonging to an alternative social group, Adequate handling of missing data, Analysis controls for confounding variables, Analytic methods appropriate. Disagreements between the review authors over the risk of bias in particular studies will be resolved by discussion, with involvement of a third review author where necessary.

**Strategy for data synthesis**

We will provide a narrative synthesis of the findings from the included studies concerning the relationship between alternative subculture affiliation and self-harm

**Analysis of subgroups or subsets**

None planned

## Appendix C

### Risk of Bias Assessment Tool

The studies will be assessed using the criteria below. Each criterion will be graded as 'yes', 'no', 'partially' or 'cannot tell'.

#### 1. Unbiased recruitment of cohort

##### Inclusion/ exclusion criteria

- Clearly described
- Criteria/labels for alternative subcultures clearly described

##### Recruitment strategy

- Clearly described
- Sample is representative of the population of interest
- Relatively free from bias (selection bias might be introduced e.g. by recruitment via advertisement)

##### *Example*

##### **Yes**

Inclusion criteria described (e.g. who the sample is they are planning to recruit? Is there anyone that would be excluded?) Does not have to say inclusion/exclusion per se.

Labels for subcultures described

Described how they recruited/what they did

Free from bias (i.e. selection bias)

##### **Partial**

Relatively free from bias

Clear what they did but less description of specific procedures

Clear what the inclusion criteria is (e.g. who the sample is that they are trying to recruit?)

##### **No**

Biased recruitment described

Not recruiting appropriate sample

##### **Cannot tell**

Little description of procedure

Very brief

## 2. Adequate description of cohort

Was the cohort well characterized in terms of baseline demographics?

- Age
- Sex
- Ethnicity
- Diagnosis/ clinical status
- Education
- Socioeconomic characteristics

*Example*

### Yes

Cohort well described in terms of demographic variables. Must mention age and gender and describe their meanings of terminology (e.g. adolescent – what age group does this cover?)

### Partial

Just age and/or gender plus others

Key terms not described appropriately/ assumptions made of the reader

### No

No detail of cohort

### Cannot tell

Assumptions that the reader knows the sample, very brief

## 3. Sample size calculated (for controlled studies and where studies test for predictors/correlates of suicidality/self-harm)?

Factors to consider:

- Did the authors report conducting a power analysis or describe some other basis for determining the adequacy of study group sizes for the primary outcome(s) of interest to us?
- Did the eventual sample size deviate by  $\leq 10\%$  of the sample size suggested by the power calculation?

*Example*

### Yes

Evidence of a power calculation

### Partial

Unclear method

### No

No mention

**Cannot tell**

Mention of sample size calculation but not clear what

**4. Adequate follow-up period (longitudinal studies only)?**

**Factors to consider:**

- Minimum adequate follow-up period is 1-year for suicide attempts. A shorter follow-up period may be appropriate where suicidal ideation is the outcome. A longer period will be required where completed suicide is the outcome.
- A justification of the follow-up period length is preferable.
- Follow-up period should be the same for all groups

*Example*

**Yes**

As above

**Partial**

Follow up appropriate but no justification

**No**

Too short a time period

No justification

**Cannot tell**

Not mentioned

**5. Validated measure for determining self-harm and suicidal behaviour**

**Factors to consider:**

- Was the method used to determine self-harm/ suicidal behaviour clearly described? (Is it replicable?)
- Was a reliable and valid measure used to determine self-harm/suicidal behaviour? (medical notes likely to be biased based on variation in how assessment is undertaken, also measures based on self-report also likely to have lower reliability and validity, measures that consist of single items of scales taken from larger measures are likely to lack content validity and reliability).
- Were these measures implemented consistently across all study participants?

*Example*

**Yes**

Full validated tool

**Partial**

Single/few questions taken from a validated measure

**No**

Subjective measure

No justification of where it has come from

**Cannot tell**

No detail

## **6. Validated method for ascertaining belonging to an alternative social group**

**Factors to consider:**

- How have groups been defined and how have individuals identified themselves as being part of the group (i.e., was it self-defined?/an observation? Forced choice lists?)
- Can this be replicated?

*Example*

**Yes**

Validated measure

OR

Description of where the procedure was developed from

Enough detail to replicate

**Partial**

Can be replicated

No description of where tool came from

**No**

Cannot be replicated (e.g. too brief/context specific)

**Cannot tell**

Not enough detail

## 7. Adequate handling of missing data

### Factors to consider:

- Are the details of missing data clearly reported including how missing data was handled in the analyses?
- Did missing data exceed 20% the study? (from whole sample or any group)
- If missing data was present and substantial, were steps taken to minimize bias? (e.g. sensitivity analysis or imputation).

### *Example*

#### **Yes**

Less than 20%

Acknowledged and used an appropriate method for correction (i.e., mean imputation if relevant)

#### **Partial**

More than 20%, acknowledged and attempts made to justify, but no procedure put in place to manage missing data

#### **No**

Acknowledged missing data but do not describe what they have done

Clear there is a lot of missing data but unknown how it was responded too

#### **Cannot tell**

Does not mention missing data

## 8. Analysis controls for confounding (controlled studies and where studies test for predictors/correlates of suicidality or self-harm)?

### Factors to consider for controlled studies or those looking at predictors of self-harm or suicide within alternative subcultures:

- Does the study identify and control for important confounding variables and effect modifiers?
- Did the study control for likely demographic and clinical confounders?

### *Example*

#### **Yes**

Clear description of controls and the outcome of the analysis following adjustment

Must have; gender + risk factor for self-harm

**Partial**

Some controls implemented but has not got enough (e.g. just demographics or just risk factors)

**No**

No controls or controls measured as baseline but not used in main analysis

**Cannot tell**

No mention of controls, or mentioned as a recommendation in the discussion

**9. Analytic methods appropriate (Controlled studies and where studies test for predictors/correlates of suicidality or self-harm)?**

**Factors to consider:**

- Was the kind of analysis done appropriate for the kind of outcome data (categorical, continuous, etc.)?
- Was the number of variables used in the analysis appropriate for the sample size? (The statistical techniques used must be appropriate to the data and take into account issues such as controlling for small sample size, clustering, rare outcomes, multiple comparison, and number of covariates for a given sample size).

*Example*

**Yes**

Appropriate analysis for aim (e.g. correlation to look at relationships)

**Partial**

Appropriate but could have done more/more appropriate analysis available

**No**

Inappropriate methods

**Cannot tell**

No description

Table C1

*Notes made to guide the risk of bias assessment decisions*

<b>Study Reference</b>	<b>Unbiased Recruitment of Cohort</b>	<b>Adequate Description of Cohort</b>	<b>Validated Measure for Determining Self-Harm and Suicidal Behaviour</b>	<b>Validated Method for Ascertaining Belonging to an Alternative Social Group<sup>a</sup></b>	<b>Adequate Handling of Missing Data</b>	<b>Analysis Controls for Confounding Variables</b>	<b>Analytic Methods Appropriate</b>	<b>Sample Size Calculated?</b>	<b>Adequate Follow Up Period (if longitudinal)</b>
Bowes et al. (2015)	Yes: Population of interest described; clear description of social group; clear recruitment strategy (representative of population of interest). Relatively free from bias.	Yes: Demographic information presented (e.g. age, gender, SES); range of clinical characteristics (e.g. earlier years, self-harm, depression, temperament etc.)	Partial: Used single items from depression tools (but validated). Different tools used at 15 years and 18 years (follow up).	Yes: Adapted validated tool (peer crowd questionnaire) using focus groups to develop tool, identifying salient social groups. Clearly described and can be replicated	Yes: Substantial missing data as expected with longitudinal study. Acknowledged and imputation process used.	Yes: Controlled for gender, previous depression, previous self-harm, history of bullying, maternal depression and more.	Yes: Odds ratios for effect sizes for categorical data. Logistic regression for predictors.	No: Not mentioned	Yes: Follow up yearly from 7 years to 18 years (appropriate time period, long enough for outcomes; not investigating suicide so longer times not required).

Burge, Goldblat & Lester (2010)	Partial: Vague description of recruitment procedure; sample used clear; labels described clearly.	Partial: Age and gender.	Yes: Suicidal ideation scale (validated measure)	Partial: Not clear how tool was developed. Unvalidated measure. Can be replicated from description.	Cannot tell: Not mentioned.	Cannot tell: It is not clear if the demographic variables were controlled for. Not enough detail.	Yes: Regression for predictor variables. Factor analysis to group similar music tastes.	No: Not mentioned	N/A
Lester & Whipple (1996)	Partial: Unclear description of recruitment; labels of music clear. Potentially opportunistic sampling (e.g. given in college).	Partial: Gender and age.	Partial: Single item from validated scale.	Partial: Development of measure not clear but can be replicated from description.	Cannot tell: Not mentioned.	Partial: Controlled for age and gender but no clinical/risk factors of self-harm.	Yes: Factor analysis to find similar music tastes to group; correlation and multiple regression to explore relationships/predictors.	No: No mention	N/A
Martin, Clarke & Pearce (1993)	Partial: Clearly described recruitment methods. Term 'adolescent' not defined. Recruits just year 10 students.	Yes: Age, gender, parental factors, ethnicity.	Partial: Two questions from a validated scale	No: Self-defined and put in groups; context specific. Potentially not replicable dependent on sample.	Cannot tell: No mention	No: Lots of variables measured independently but no mention of controlling for any.	Yes: Lots of descriptive statistics and chi square for categorical comparisons	No: No mention	N/A

O'Connor (2015)	Yes: Very detailed recruitment strategy. Clearly defined inclusion/exclusion criteria. Potentially some minor bias through self-selection.	Yes: Age, gender, ethnicity, sexuality, religion.	Partial: Single items from validated measures	Yes: Self-identified as 'goth' or 'emo'. Replicable.	Yes: <20% missing after exclusion. All missing data acknowledged.	No: No mention of any confounders	Yes: T-tests to compare means across two groups	Yes: Power analysis presented	N/A
Scheel & Westefeld (1999)	Partial: Psychology students in class (possibly opportunistic sampling). Term adolescent not defined. Recruitment clearly described.	Yes: Age, gender, ethnicity, area, social class.	Yes: Suicide risk questionnaire (validated tool)	Yes: Groups formed from consultation; lots of guidance for replication.	Yes : < 20% missing; reported no imputation	No: None described	Yes: Chi squared to describe categorical variables. Descriptive statistics presented.	No: No power analysis mentioned.	N/A

Stack, Gundlach & Reeves (1994)	Yes: Clearly described where data was collected from, who was being targeted.	No: Not individual data (state level). Mentions age only.	Yes: Official records of suicide.	No: Observation of magazine subscriptions, possibly making assumptions of affiliation.	Cannot tell: No info	Partial: Describes both demographic and potential risk factors but excludes gender.	Yes: Correlation and regression to measure predictors of suicide.	No: No power calculation mentioned.	N/A
Young, Sweeting & West (2006)	Yes: Target population outlined; recruitment strategy clear.	Partial: Gender, parental data, substance use, SES (no age).	Partial: Some questions used that can be replicated but does not say where the questions are from.	Partial: Does not say how scale was developed but procedure can be replicated.	Partial: Acknowledge unweighted data to account for attrition bias as weighted made no difference (missing data did not alter results).	Yes: Lots of factors including other social groups, gender, substance use, depression.	Yes: Descriptive data, odds ratio and chi square for categorical data.	No: No power calculation mentioned.	Yes: Followed up yearly which is appropriate for outcomes.
Young, Sproeber, Groschwitz, Preiss & Plener (2014)	Partial: Recruitment clearly described. The term teenager not defined; sample mainly 14/15 years.	Yes: Age, gender, SES, experience of victimisation.	Yes: Validated measures; SHRQ, FASM.	Yes: Adapted from a validated measure; can be replicated.	No: Does not provide details of missing data and acknowledges that this is a limitation of the study.	Yes: Gender, substance use, SES, experience of victimisation.	Yes: Factor analysis to group similar social groups; correlations for associations; odds ratios and chi square for categorical data.	No: No mention of a power analysis.	N/A

*Note.* <sup>a</sup>In the absence of available validated measures that assess alternative group identity or music preference (Scheel & Westefeld, 1999), those which described how the tool had been developed and gave a clear description of how it was used was understood as being a valid method of understanding group identity (e.g. some studies consulted with young people and used procedures from previous research to develop a list of subcultures prior to using the tool). The four studies that were judged to be partially validated were those who described the method in a way that it could be replicated, but failed to describe the development of the tool or give sufficient detail. Martin and colleagues' (1993) procedure was noted as not valid as subcultures were self-defined and therefore responses would potentially depend upon the sample, making it difficult to replicate. Stack et al. (1994) made an assumption that those who subscribed to a heavy metal magazine affiliated with the subculture, therefore was deemed invalid also.

## Appendix D

### Demographic Information

The following questions will be asking you a bit about yourself.

Q1 Age:

What age are you? \_\_\_\_\_

Q2 Gender:

What is your sex?

- Male (1)
- Female (2)
- Transgender (3)

Q3 Ethnicity:

What is your ethnic group? Choose one option that best describes your ethnic group or background

- White British (1)
- White Irish (2)
- Any other white background (3) \_\_\_\_\_
- Asian British (4)
- Indian (5)
- Pakistani (6)
- Bangladeshi (7)
- Chinese (8)
- Any other Asian background (9) \_\_\_\_\_
- Black African (10)
- Black Caribbean (11)
- Black British (12)
- Any other Black background (13) \_\_\_\_\_
- White and Black Caribbean (14)
- White and Black African (15)
- White and Black Asian (16)
- Any other mixed background (17) \_\_\_\_\_
- Arab (18)
- Any other ethnic group (please describe) (19) \_\_\_\_\_

Q11 Employment status:

Are you currently....

- Employed for wages (1)
- Self-employed (2)
- Out of work and looking for work (3)
- Out of work but not currently looking for work (4)
- A home maker (5)
- A student (6)
- Unable to work (7)
- Other (please describe) (8) \_\_\_\_\_

Q12 Mental health:

Have you had any previous contact with mental health services or are you currently under mental health services?

- Yes - current contact (1)
- Yes - previous contact (2)
- No contact (3)

Q13 Substance use:

Do you currently or have you in the past used substances (i.e., drugs and/or alcohol). Please check all that are relevant

- Yes, I currently take illegal drugs (1)
- Yes, I currently take alcohol (2)
- Yes, I currently take legal highs (3)
- Yes, I have taken illegal drugs in the past (4)
- Yes, I have taken alcohol in the past (5)
- Yes, I have taken legal highs in the past (6)
- No, I do not and have not taken any drugs (illegal/legal) and/or alcohol (7)

Appendix E

Social Group Measure

People can belong to a number of different social groups. A person may identify very strongly with a group (e.g., feel they really belong to this group) or just feel a weaker connection to a social group (e.g., like some of the music, wear some of the clothes). A person may feel that they belong to several different social groups. Please indicate how much you identify with the following social groups

	Not at all (1)	A little or mildly (2)	Moderately (3)	Strongly (4)	I am one (5)
Emo (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Punk (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Goth (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mosher (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Metalhead (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Indie (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clubber (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reggae (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cosplay/anime (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scene kid (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gamer (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skater (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sporty (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Popular (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nerd/geek (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (what would you call your group? How would you describe it?) _____ (17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Appendix F*

Inventory of Statements about Self-Injury (ISAS)

INVENTORY OF STATEMENTS ABOUT SELF-INJURY (ISAS) – SECTION I.  
BEHAVIORS

This questionnaire asks about a variety of self-harm behaviors. Please only report a behavior if you have done it intentionally (i.e., on purpose) and without suicidal intent (i.e., not for suicidal reasons).

1. Please estimate the number of times in your life you have intentionally (i.e., on purpose) performed each type of non-suicidal self-harm (e.g., 0, 10, 100, 500):

Cutting \_\_\_\_ Severe Scratching \_\_\_\_

Biting \_\_\_\_ Banging or Hitting Self \_\_\_\_

Burning \_\_\_\_ Interfering w/ Wound Healing \_\_\_\_ (e.g., picking scabs)

Carving \_\_\_\_ Rubbing Skin Against Rough Surface \_\_\_\_

Pinching \_\_\_\_ Sticking Self w/ Needles \_\_\_\_

Pulling Hair \_\_\_\_ Swallowing Dangerous Substances \_\_\_\_

Other \_\_\_\_\_, \_\_\_\_\_

\*\*\*\*\* Important: If you have performed one or more of the behaviors listed above, please complete the final part of this questionnaire. If you have not performed any of the behaviors listed above, you are done with this particular questionnaire and should continue to the next.

\*\*\*\*\*  
\*\*\*\*\*

\*Here a question was added, 'I have never intentionally hurt myself' (If participants ticked the box, they were directed to the next questionnaire).

2. If you feel that you have a main form of self-harm, please circle the behavior(s) on the first page above that you consider to be your main form of self-harm.

3. At what age did you:

First harm yourself? \_\_\_\_\_

Most recently harm yourself? \_\_\_\_\_ (approximate date – month/date/year)

4. Do you experience physical pain during self-harm?

Please circle a choice: YES SOMETIMES NO

5. When you self-harm, are you alone?

Please circle a choice: YES SOMETIMES NO

6. Typically, how much time elapses from the time you have the urge to self-harm until you act on the urge?

Please circle a choice:

< 1 hour 1 - 3 hours 3 - 6 hours 6 - 12 hours 12 - 24 hours > 1 day

7. Do/did you want to stop self-harming?

Please circle a choice: YES NO

Response Key: 0 – not relevant, 1 – somewhat relevant, 2 – very relevant

## INVENTORY OF STATEMENTS ABOUT SELF-INJURY (ISAS) – SECTION II. FUNCTIONS

### Instructions

This inventory was written to help us better understand the experience of non-suicidal self-harm. Below is a list of statements that may or may not be relevant to your experience of self-harm. Please identify the statements that are most relevant for you:

• Circle 0 if the statement not relevant for you at all • Circle 1 if the statement is somewhat relevant for you • Circle 2 if the statement is very relevant for you

“When I self-harm, I am ...

1. ... calming myself down 0 1 2
2. ... creating a boundary between myself and others 0 1 2
3. ... punishing myself 0 1 2
4. ... giving myself a way to care for myself (by attending to the wound) 0 1 2
5. ... causing pain so I will stop feeling numb 0 1 2
6. ... avoiding the impulse to attempt suicide 0 1 2
7. ... doing something to generate excitement or exhilaration 0 1 2
8. ... bonding with peers 0 1 2
9. ... letting others know the extent of my emotional pain 0 1 2
10. ... seeing if I can stand the pain 0 1 2
11. ... creating a physical sign that I feel awful 0 1 2
12. ... getting back at someone 0 1 2
13. ... ensuring that I am self-sufficient 0 1 2
14. ... releasing emotional pressure that has built up inside of me 0 1 2
15. ... demonstrating that I am separate from other people 0 1 2
16. ... expressing anger towards myself for being worthless or stupid 0 1 2
17. ... creating a physical injury that is easier to care for than my emotional distress  
0 1 2

18. ... trying to feel something (as opposed to nothing) even if it is physical pain  
0 1 2
19. ... responding to suicidal thoughts without actually attempting suicide 0 1 2
20. ... entertaining myself or others by doing something extreme 0 1 2
21. ... fitting in with others 0 1 2
22. ... seeking care or help from others 0 1 2
23. ... demonstrating I am tough or strong 0 1 2
24. ... proving to myself that my emotional pain is real 0 1 2
25. ... getting revenge against others 0 1 2
26. ... demonstrating that I do not need to rely on others for help 0 1 2
27. ... reducing anxiety, frustration, anger, or other overwhelming emotions 0 1 2
28. ... establishing a barrier between myself and others 0 1 2
29. ... reacting to feeling unhappy with myself or disgusted with myself 0 1 2
30. ... allowing myself to focus on treating the injury, which can be gratifying or satisfying  
0 1 2
31. ... making sure I am still alive when I don't feel real 0 1 2
32. ... putting a stop to suicidal thoughts 0 1 2
33. ... pushing my limits in a manner akin to skydiving or other extreme activities  
0 1 2
34. ... creating a sign of friendship or kinship with friends or loved ones 0 1 2
35. ... keeping a loved one from leaving or abandoning me 0 1 2
36. ... proving I can take the physical pain 0 1 2
37. ... signifying the emotional distress I'm experiencing 0 1 2
38. ... trying to hurt someone close to me 0 1 2
39. ... establishing that I am autonomous/independent 0 1 2

(Optional) In the space below, please list any statements that you feel would be more accurate for you than the ones listed above:

(Optional) In the space below, please list any statements you feel should be added to the above list, even if they do not necessarily apply to you:

#### ITEMS COMPRISING EACH OF 13 FUNCTIONS SCALES

Affect Regulation – 1, 14, 27

Interpersonal Boundaries – 2, 15, 28

Self-Punishment – 3, 16, 29

Self-Care – 4, 17, 30

Anti-Dissociation/Feeling-Generation – 5, 18, 31

Anti-Suicide – 6, 19, 32

Sensation-Seeking – 7, 20, 33

Peer-Bonding – 8, 21, 34

Interpersonal Influence – 9, 22, 35

Toughness – 10, 23, 36

Marking Distress – 11, 24, 37

Revenge – 12, 25, 38

Autonomy – 13, 26, 39

Scores for each of the 13 functions range from 0 to 6.

*Appendix G*

Difficulties in Emotion Regulation Scale (DERS)

1	2	3	4	5
Almost never	Sometimes	About half the time	Most of the time	Almost always
(0-10%)	(11-35%)	(36-65%)	(66-90%)	(91-100%)

Please indicate how often the following 36 statements apply to you by writing the appropriate number from the scale above (1 – 5) in the box alongside each item.

- 1 I am clear about my feelings (R)
- 2 I pay attention to how I feel (R)
- 3 I experience my emotions as overwhelming and out of control
- 4 I have no idea how I am feeling
- 5 I have difficulty making sense out of my feelings
- 6 I am attentive to my feelings (R)
- 7 I know exactly how I am feeling (R)
- 8 I care about what I am feeling (R)
- 9 I am confused about how I feel
- 10 When I'm upset, I acknowledge my emotions (R)
- 11 When I'm upset, I become angry with myself for feeling that way
- 12 When I'm upset, I become embarrassed for feeling that way
- 13 When I'm upset, I have difficulty getting work done
- 14 When I'm upset, I become out of control
- 15 When I'm upset, I believe that I will remain that way for a long time
- 16 When I'm upset, I believe that I'll end up feeling very depressed
- 17 When I'm upset, I believe that my feelings are valid and important (R)
- 18 When I'm upset, I have difficulty focusing on other things
- 19 When I'm upset, I feel out of control
- 20 When I'm upset, I can still get things done (R)
- 21 When I'm upset, I feel ashamed with myself for feeling that way

- 22 When I'm upset, I know that I can find a way to eventually feel better (R)
- 23 When I'm upset, I feel like I am weak
- 24 When I'm upset, I feel like I can remain in control of my behaviours (R)
- 25 When I'm upset, I feel guilty for feeling that way
- 26 When I'm upset, I have difficulty concentrating
- 27 When I'm upset, I have difficulty controlling my behaviours
- 28 When I'm upset, I believe that there is nothing I can do to make myself feel better
- 29 When I'm upset, I become irritated with myself for feeling that way
- 30 When I'm upset, I start to feel very bad about myself
- 31 When I'm upset, I believe that wallowing in it is all I can do
- 32 When I'm upset, I lose control over my behaviours
- 33 When I'm upset, I have difficulty thinking about anything else
- 34 When I'm upset, I take time to figure out what I'm really feeling (R)
- 35 When I'm upset, it takes me a long time to feel better
- 36 When I'm upset, my emotions feel overwhelming

## SCORING THE DERS

The DERS is a brief, 36-item self-report questionnaire designed to assess multiple aspects of emotional dysregulation. Reverse-scored items (R) are numbered 1, 2, 6, 7, 8, 10, 17, 20, 22, 24 and 34. Higher scores suggest greater problems with emotion regulation. The measure yields a total score (SUM) as well as scores on six sub-scales:

### 1. Non-acceptance of emotional responses (NONACCEPT)

- 25) When I'm upset, I feel guilty for feeling that way
- 21) When I'm upset, I feel ashamed with myself for feeling that way
- 12) When I'm upset, I become embarrassed for feeling that way
- 11) When I'm upset, I become angry with myself for feeling that way
- 29) When I'm upset, I become irritated with myself for feeling that way
- 23) When I'm upset, I feel like I am weak

### 2. Difficulties engaging in goal directed behaviour (GOALS )

- 26) When I'm upset, I have difficulty concentrating
- 18) When I'm upset, I have difficulty focusing on other things
- 13) When I'm upset, I have difficulty getting work done

- 33) When I'm upset, I have difficulty thinking about anything else
- 20) When I'm upset, I can still get things done (R)

3. Impulse control difficulties (IMPULSE)

- 32) When I'm upset, I lose control over my behaviours
- 27) When I'm upset, I have difficulty controlling my behaviours
- 14) When I'm upset, I become out of control
- 19) When I'm upset, I feel out of control
- 3) I experience my emotions as overwhelming and out of control
- 24) When I'm upset, I feel like I can remain in control of my behaviours (R)

4. Lack of emotional awareness (AWARE)

- 6) I am attentive to my feelings (R)
- 2) I pay attention to how I feel (R)
- 10) When I'm upset, I acknowledge my emotions (R)
- 17) When I'm upset, I believe that my feelings are valid and important (R)
- 8) I care about what I am feeling (R)
- 34) When I'm upset, I take time to figure out what I'm really feeling (R)

5. Limited access to emotion regulation strategies (STRATEGIES)

- 16) When I'm upset, I believe that I'll end up feeling very depressed
- 15) When I'm upset, I believe that I will remain that way for a long time
- 31) When I'm upset, I believe that wallowing in it is all I can do
- 35) When I'm upset, it takes me a long time to feel better
- 28) When I'm upset, I believe that there is nothing I can do to make myself feel better
- 22) When I'm upset, I know that I can find a way to eventually feel better (R)
- 36) When I'm upset, my emotions feel overwhelming
- 30) When I'm upset, I start to feel very bad about myself

6. Lack of emotional clarity (CLARITY)

- 5) I have difficulty making sense out of my feelings
- 4) I have no idea how I am feeling
- 9) I am confused about how I feel
- 7) I know exactly how I am feeling (R)
- 1) I am clear about my feelings (R)

## Appendix H

### Erikson Psychosocial Stage Inventory (EPSI)

#### Identity subscale

Please tick one of five positions from "almost always true" (5) to "hardly ever true" (1) on a Likert rating scale for each item.

I change my opinion of myself a lot (R)	1	2	3	4	5
I've got a clear idea of what I want to be	1	2	3	4	5
I feel mixed up (R)	1	2	3	4	5
The important things in life are clear to me	1	2	3	4	5
I've got it together	1	2	3	4	5
I know what kind of person I am	1	2	3	4	5
I can't decide what I want to do with my life (R)	1	2	3	4	5
I have a strong sense of what it means to be female/male	1	2	3	4	5
I like myself and am proud of what I stand for	1	2	3	4	5
I don't really know what I'm on about (R)	1	2	3	4	5
I find I have to keep up a front when I'm with people (R)	1	2	3	4	5
I don't really feel involved (R)	1	2	3	4	5

#### Scoring

(R) = Reverse scored items

Sum items to get a total score for the subscale

Appendix I

Depression, Anxiety and Stress Scales (DASS 21)

# DASS<sub>21</sub>

Name:

Date:

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

*The rating scale is as follows:*

- 0 Did not apply to me at all
- 1 Applied to me to some degree, or some of the time
- 2 Applied to me to a considerable degree, or a good part of time
- 3 Applied to me very much, or most of the time

1. I found it hard to wind down	0	1	2	3
2. I was aware of dryness of my mouth	0	1	2	3
3. I couldn't seem to experience any positive feeling at all	0	1	2	3
4. I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5. I found it difficult to work up the initiative to do things	0	1	2	3
6. I tended to over-react to situations	0	1	2	3
7. I experienced trembling (eg, in the hands)	0	1	2	3
8. I felt that I was using a lot of nervous energy	0	1	2	3
9. I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10. I felt that I had nothing to look forward to	0	1	2	3
11. I found myself getting agitated	0	1	2	3
12. I found it difficult to relax	0	1	2	3
13. I felt down-hearted and blue	0	1	2	3
14. I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15. I felt I was close to panic	0	1	2	3
16. I was unable to become enthusiastic about anything	0	1	2	3
17. I felt I wasn't worth much as a person	0	1	2	3

18. I felt that I was rather touchy	0	1	2	3
19. I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
20. I felt scared without any good reason	0	1	2	3
21. I felt that life was meaningless	0	1	2	3

### Scoring

Sum the score of each item to get a total score

- 1) For questions numbered 3, 5, 10, 13, 16, 17, 21 add up the numbers circled then multiply that number by 2 and enter it here: \_\_\_\_\_ (Depression score)
- 2) For questions numbered 2, 4, 7, 9, 15, 19, 20 add up the numbers circled then multiply that number by 2 and enter it here: \_\_\_\_\_ (Anxiety score)
- 3) For questions numbered 1, 6, 8, 11, 12, 14, 18 add up the numbers circled then multiply that number by 2 and enter it here: \_\_\_\_\_ (Stress score)

Refer to the chart below and for each numbered question above, refer to the same number in the table below to determine how mild or serious each condition may be.

Rating	Depression	Anxiety	Stress
<b>Normal</b>	0-9	0-7	0-14
<b>Mild</b>	10-13	8-9	15-18
<b>Moderate</b>	14-20	10-14	19-25
<b>Severe</b>	21-17	15-19	26-33
<b>Extremely severe</b>	28+	20+	37+

The depression scale was used in the current study.

## *Appendix J*

### Ethical Approval Documents

Dear Peter and Mairead,

I am pleased to inform you that your study has been approved. Details and conditions of the approval can be found below.

Ethics reference number: RETH000948

Committee name: Research Ethics Subcommittee for Non-Invasive Procedures

Review type: Full committee review

Title of study: The impact of group identity on self-harm in young people

Principal Investigator: Dr Peter Taylor

Student Investigator: Miss Mairead Hughes

Co-Applicant: Dr Sue Knowles

School/Institute: Department of Clinical Psychology

First reviewer: Professor Elizabeth Perkins

Approval date: 24/11/15

The application was APPROVED subject to the following conditions:

#### **Conditions**

All serious adverse events must be reported to the Subcommittee within 24 hours of their occurrence, via the Research Integrity and Governance Officer ([ethics@liv.ac.uk](mailto:ethics@liv.ac.uk)).

This approval applies for the duration of the research. If it is proposed to extend the duration of the study as specified in the application form, the Subcommittee should be notified. If it is proposed to make an amendment to the research, you should notify the Committee by following the Notice of Amendment procedure. If the named PI / Supervisor leaves the employment of the University during the course of this approval, the approval will lapse. Therefore please contact the Research Integrity and Governance Officer at [ethics@liverpool.ac.uk](mailto:ethics@liverpool.ac.uk) in order to notify them of a change in PI / Supervisor.

Kind regards,

Mantelena

Research Ethics and Integrity Officer

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21/7/15

Mairead Hughes  
Clinical Psychology Trainee  
Doctorate of Clinical Psychology Doctorate Programme  
University of Liverpool  
L69 3GB

**RE: The impact of group identity on self-harm in young people**

**Trainee:** Mairead Hughes

**Supervisors:** Dr Peter Taylor, Dr Sue Knowles

Dear Mairead,

Thank you for your response to the reviewers' comments of your research proposal submitted to the D.Clin.Psychol. Research Review Committee (letter not dated, submitted 20/07/15).

I can now confirm that your amended proposal (version 2, dated 20/07/15) and revised budget (version 2, dated 20/07/15) meet the requirements of the committee and have been approved by the Committee Chair.

Please take this Chairs Action decision as **final** approval from the committee.

You may now progress to the next stages of your research.

I wish you well with your research project.

Dr Catrin Eames

Vice-Chair D.Clin.Psychol. Research Review Committee.

cc. Dr J Dickson, Chair DCLinPsy RRC.



**Are you aged 16-25 and have 20 minutes to spare?**

**Research Volunteers Wanted**

Mairead Hughes (Trainee Clinical Psychologist) is currently recruiting young people between the ages of **16 and 25 years** old to take part in a study looking at factors that can contribute and protect against self harm. Self harm is common but often hidden. We would like to understand it to a greater extent as to know how to support young people in the future.

**NOTE: Both young people who do and do not self harm are invited to take part and your participation will remain ANONYMOUS.**

The study will be running from **January to December 2016.**

We are asking people to volunteer to complete several online questionnaires. This will take about 20-40 minutes maximum.

As reimbursement for time and effort, participants will have the option to enter a prize draw to win one of three **£50 amazon/itunes/steam vouchers** upon completion of the questionnaires.

**More information and the link to take part in the study can be accessed via this website:**

[https://livpsych.az1.qualtrics.com/SE/?SID=SV\\_3xxjUM04JhinzOR](https://livpsych.az1.qualtrics.com/SE/?SID=SV_3xxjUM04JhinzOR)

## Appendix L

### Participant Information Sheet



### Participant Information Sheet

#### **Title of Study: The impact of group identity on self-harm in young people**

You are being invited to take part in an online research study. Before you decide whether you would like to take part or not, it is important for you to understand why the research is being done and what it will involve. **Please take time to read the following information carefully and discuss it with others if you wish.** If anything is not clear, or you would like some more information, you can email the researcher on [Mairead.hughes@liverpool.ac.uk](mailto:Mairead.hughes@liverpool.ac.uk).

#### **What is the study for?**

This research is about understanding what psychological and social factors contribute to whether or not young-people (aged 16-25 years) experience self-harm. **This study is both for people who have experienced self-harm and those who have not.** We are particularly interested in self-harm across different social groups.

Research has indicated that young people from specific sub cultures (i.e., goth) may have higher rates of self harm. However, there are many unhelpful myths and assumptions about why this might be. It is important not to assume that belonging to a particular social group causes self-harm. In this study we hope to better understand what factors may lead to self-harm and protect individuals from self-harm within different social groups. **This study is both for people who feel they belong to a particular social group and those who do not.**

We will use this research to raise awareness and understanding of self-harm in this population as to inform and improve care and support for young people in the future.

**Who is doing the study and who has approved it?**

The study is being carried out by a team from the University of Liverpool. It has been approved by the University of Liverpool's Research Ethics Committee.

**Why have I been chosen to take part?**

We are inviting any young people who are aged 16-25 years old to take part, who meet our inclusion criteria. We are hoping to hear from young people who self-harm and young people who don't, and people who either identify with a particular social group or do not. We want to make sure that we have a wide range of young people taking part.

**Am I eligible to take part?**

We are inviting individuals who are between the ages of 16 and 25 years old who can read English, have access to the internet and are computer literate.

**Do I have to take part in the study?**

No. It is up to you to decide whether or not to take part. If you decide to take part then we will ask you to complete a consent form. However, you are still free to withdraw at any time without giving a reason. If you choose to withdraw, you will be directed to a debrief page and asked to check a box if you want your data to be deleted and not used in the study. A decision to withdraw, or a decision not to take part, will not affect you in any way.

**What will taking part involve?**

If you want to take part, the link will direct you to complete an online consent form. This is to confirm that you have checked that the study is right for you and that you are happy to participate. The instructions will then ask you to complete a set of short online questionnaires. We estimate that these should take between 20 and 40 minutes to complete in a single sitting. It is usually possible to take short breaks with the browser window left open or to save your responses and return to them within 7 days. However, with longer breaks there is a possibility the browser may time-out and your progress will be lost. Once you have completed the questionnaires, you will have finished the study. There will be no further questionnaires or any other kind of follow up in the future. At the end of the study, you will be given the option to enter a prize draw to win one of three £50 vouchers. If you would like to enter, you will be asked to follow a link to another page which will ask you to enter your email address. Your email address will not be connected to your responses in any way, therefore your responses will remain anonymous. The survey will ask you for no other identifying information. Once the study closes (expected date February 2017), the draw will take place and you will be informed by email if you have won a prize.

**Will there be benefits of taking part?**

There are no specific benefits from taking part, besides the chance to win an amazon voucher should you choose to enter the prize draw at the end. However, by taking part you will help us to further improve understanding and awareness for young people who self harm in the future. The goal of the research is to help inform the way we support those who struggle with self-harm (e.g., by providing guidance to health workers and policy makers).

**What are the possible disadvantages of taking part?**

The questionnaires will take time to complete (usually about 20 minutes). They might involve answering questions about things that are upsetting to you. For example, the survey may ask you to answer questions about self-harm, including types of self harm and reasons for self harm. An example of a question that you will be asked is how relevant the statement, '*when I self harm, I am causing pain so I will stop feeling numb*' is to you. If questions in relation to self harm are not relevant to you, you will not be required to answer them. There will also be questions about your emotions, including how you cope with difficult emotions and questions about stress, anxiety and mood. However, you are free to leave the study at any time should you become upset. We will provide you with information to access additional support, such as the Samaritans (08457 90 90 90) and ChildLine (0800 1111). Furthermore, if any of the questions raise concerns you are advised to contact your GP for support, and/or discuss them with someone you trust.

**What will happen if I want to stop taking part?**

You have the right to stop answering any questionnaire at any point, without needing to give any explanation. Should you wish to do this, simply close the internet browser window or press the 'withdraw' button at the bottom of the page containing the questionnaires. Pressing this button will automatically direct you to the debriefing page and support contacts. Unfortunately, once you have completed the study it will not be possible to ask for your data to be removed, as we will have no way of identifying which sets of answers are your own.

**What if I am unhappy or there is a problem?**

If you wish to complain or have any concerns about any aspect of the way you have been treated during this study, you can approach Mairead Hughes (mairead.hughes@liv.ac.uk). Alternatively, you can contact the Research Governance Officer (0151 794 8290 or ethics@liv.ac.uk). When contacting the Research Governance Officer, please provide details of the name or description of the study (so that it can be identified), the researcher(s) involved, and the details of the complaint you wish to make.

**Will my taking part in this study be kept confidential?**

Yes it will. All responses will be anonymised, which means that no one will know your identity or which responses are yours. Any information which identifies you (for example, your contact details, should you wish to be entered into the prize draw) will be stored separately from questionnaire data. Your responses will only be viewed by the researchers involved in the study. All information collected for this research project will be kept safely and securely on a University of Liverpool password-protected computer for 10 years in a central file store in line with University of Liverpool policy for the storage of research data. Access to data by researchers not involved in the current study will be subject to further ethical review.

**What will happen to the results of this study?**

The results will form part of a Doctorate thesis in Clinical Psychology. They may also be written up for publication in academic journals. A summary of the anonymised results can be provided to any participant who wishes to receive feedback.

**Who can I contact for further information?**

Mairead Hughes (Trainee Clinical Psychologist) E: [mairead.hughes@liverpool.ac.uk](mailto:mairead.hughes@liverpool.ac.uk)

**Thank you for taking the time to read this. You should keep this information sheet for future reference**

Mairead Hughes, Trainee Clinical Psychologist, University of Liverpool

Dr Peter Taylor, Lecturer and Clinical Psychologist, University of Liverpool

Dr Sue Knowles, Clinical Psychologist, Greater Manchester West NHS Foundation Trust.

*Appendix M*

Participant Consent Form



**Title of Study: The impact of group identity on self-harm in young people**

Researcher(s): Mairead Hughes  
Dr Peter Taylor  
Dr Sue Knowles

**Please  
check box**

1. I confirm that I have read and have understood the information sheet dated October 2015(version 2) for the above study.
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, up until the completion of the survey, without my legal rights being affected.
3. I agree to my anonymised questionnaire data being stored at the University of Liverpool in line with their policy for the storage of research data.
4. I understand and agree that once I submit my data it will become anonymised and I will therefore no longer be able to withdraw my data.
5. I confirm that I fulfil the inclusion criteria outlined in the participant information sheet, including that I am aged over 16 years.
6. I understand that by checking all the boxes, I agree to take part in this study.

**The contact details of the researchers that will be carrying out the study are:**

Mairead Hughes, Department of Clinical Psychology, 0151 7945856, [mairead.hughes@liv.ac.uk](mailto:mairead.hughes@liv.ac.uk)

[Dr Peter Taylor, Department of Clinical Psychology, 01517945856, pjtay@liverpool.ac.uk](mailto:pjtay@liverpool.ac.uk)

**Thank you very much for your time and cooperation**

## Appendix N

### Debriefing Information

# THANK YOU!

We really appreciate the time and effort that you have put into participating in this study. If you would like to be entered into the prize draw to win one of three £50 amazon/itunes/steam vouchers, then please enter your email address into the box below. Entry is not mandatory, so if you do not wish to be entered into the draw then please leave this box blank.

[https://livpsych.az1.qualtrics.com/SE/?SID=SV\\_56IWmBkA248MwbX](https://livpsych.az1.qualtrics.com/SE/?SID=SV_56IWmBkA248MwbX)

The draw will take place once the study has closed, and you will be informed whether you have been successful via the email address above.

We hope that there has been nothing upsetting about taking part. However, we would like to remind you that if any of the questions raise concerns or distress, you are advised to contact your GP for support, and/or discuss them with someone you trust. You can also gain support by contacting an independent support organisation such as The Samaritans (08457 90 90 90/[www.samaritans.org](http://www.samaritans.org)) or ChildLine (0800 1111/[www.chidline.org](http://www.chidline.org)). If you have further questions or feel like you require additional support, Dr Peter Taylor (see details below) can provide further signposting information.

**The contact details of the researchers that will be carrying out the study are:**

Mairead Hughes, Department of Clinical Psychology, 0151 7945856, [mairead.hughes@liv.ac.uk](mailto:mairead.hughes@liv.ac.uk)

Dr Peter Taylor, Department of Clinical Psychology, 01517945856, [pjtay@liverpool.ac.uk](mailto:pjtay@liverpool.ac.uk)

## *Appendix O*

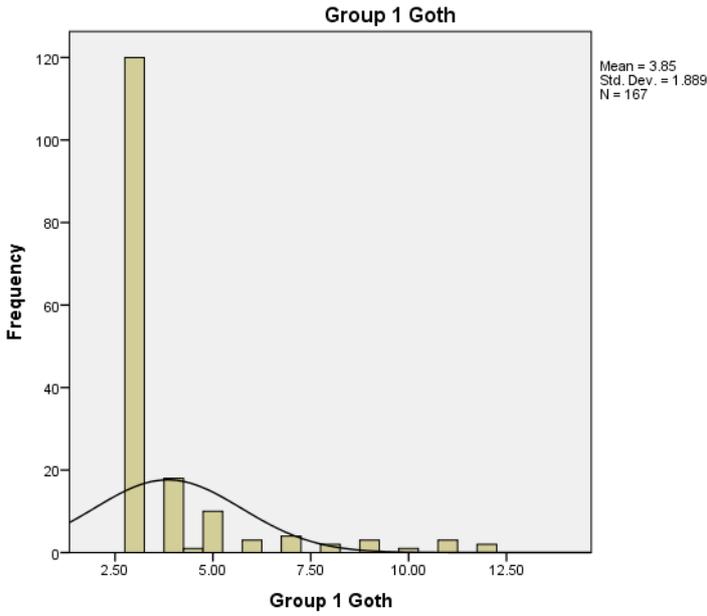
### Ethical Considerations

A participant information sheet gave a detailed account of the study, including trigger warnings (regularly used within this context on the internet; Lewis, St Denis, Heath, & Noble, 2011) to indicate the possibility of distress, allowing participants to make an informed choice about taking part, prior to completing a consent form. Also, it was detailed that participants could stop should they feel distressed, with there being clear questions giving participants the option to withdraw throughout the survey which, if selected, would lead to a debrief page (BPS, 2013). Participants were required to complete the questionnaires anonymously, seen as important for topics of this nature (Saunders, Resnick, Hoberman & Blum, 1994). Signposting information for national sources of support (e.g., Samaritans) was provided at the end of the study and participants were encouraged to talk to their GP should they feel distressed following the study. They also had the option of contacting the primary supervisor (a qualified clinical psychologist) who agreed be available to provide further signposting advice. However, taking part in the study was not expected to trigger any additional distress to what is normal for this group, and this option was not required.

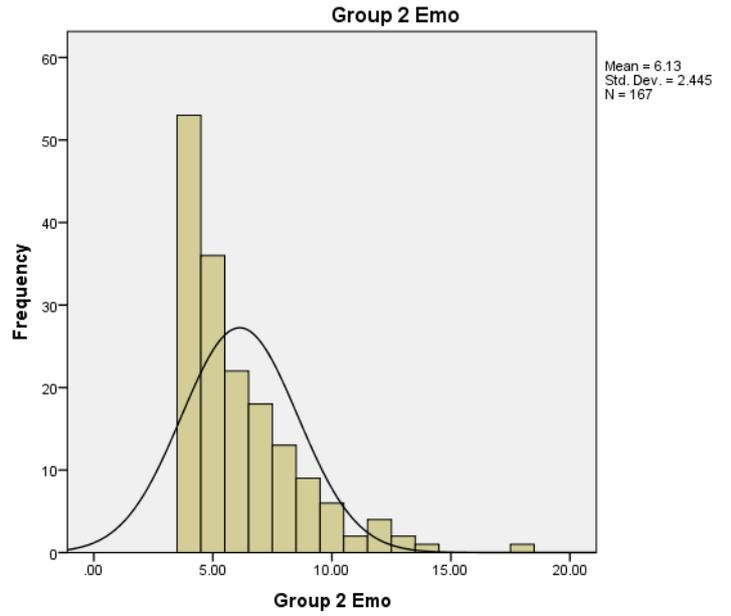
## *Appendix P*

### Assumptions for Statistical Analysis

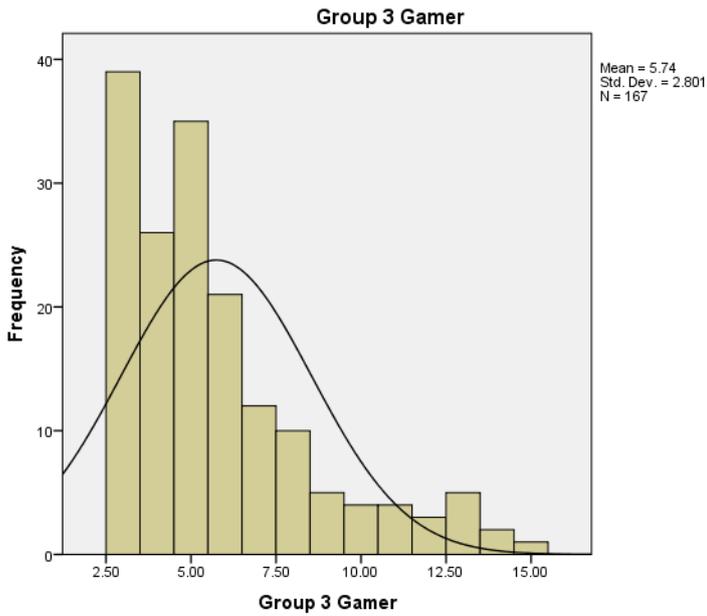
Before any analysis was undertaken, the data was screened to check for violations of normality, homogeneity and linearity. Inspection of histograms (Figures P1 -P8), calculation of the skewness and kurtosis statistics (Table P1) and performance of the Shapiro Wilk test (Table P2; as recommended by the literature as being the most superior normality test; Ghasemi & Zahediasl, 2012; Shapiro, Wilk, & Chen, 1968) indicated that the data violated the assumptions required for parametric testing (i.e., data deviated from normal). As a result, the non-parametric Mann-Whitney test was used to explore the differences in social groups and NSSI and Spearman's correlations used to explore the relationships between predictor variables of NSSI.



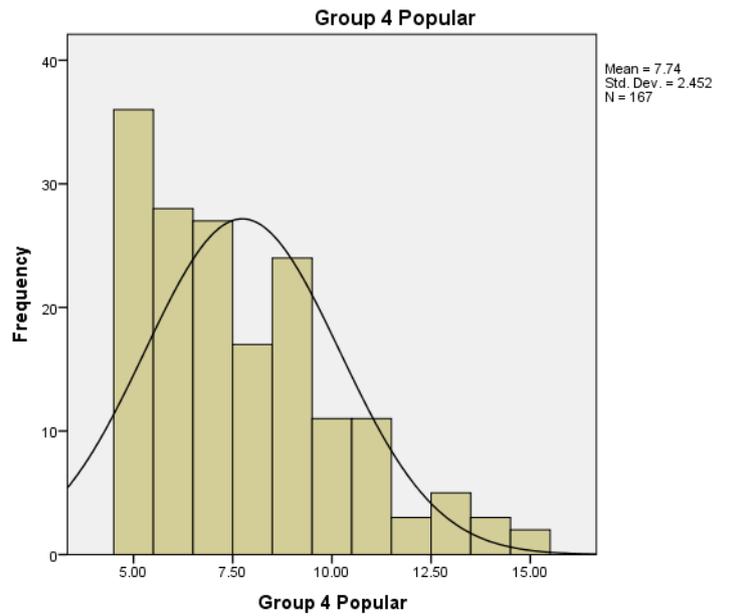
*Figure P1.* Distribution of Goth/Metal affiliation scores



*Figure P2.* Distribution of Emo/Punk affiliation scores



*Figure P3.* Distribution of Gamer/Nerd affiliation scores



*Figure P4.* Distribution of Popular/Sporty affiliation scores

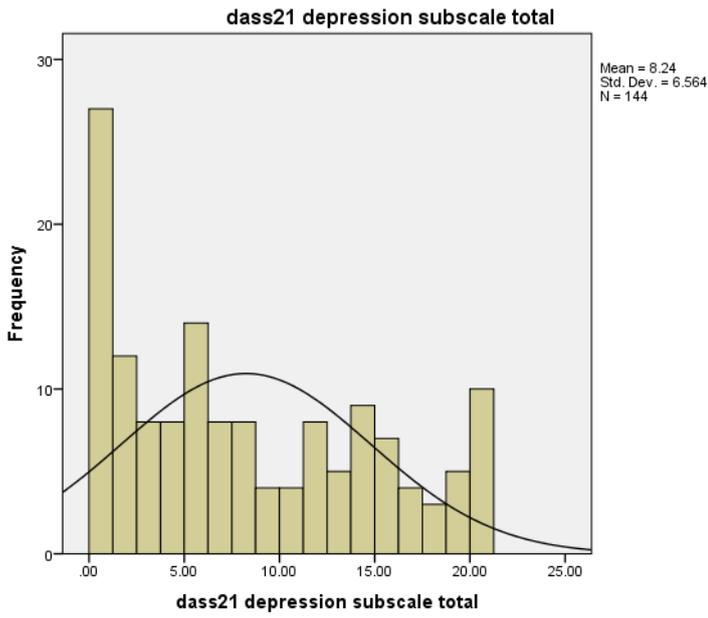


Figure P5. Distribution of depression scores (DASS 21)

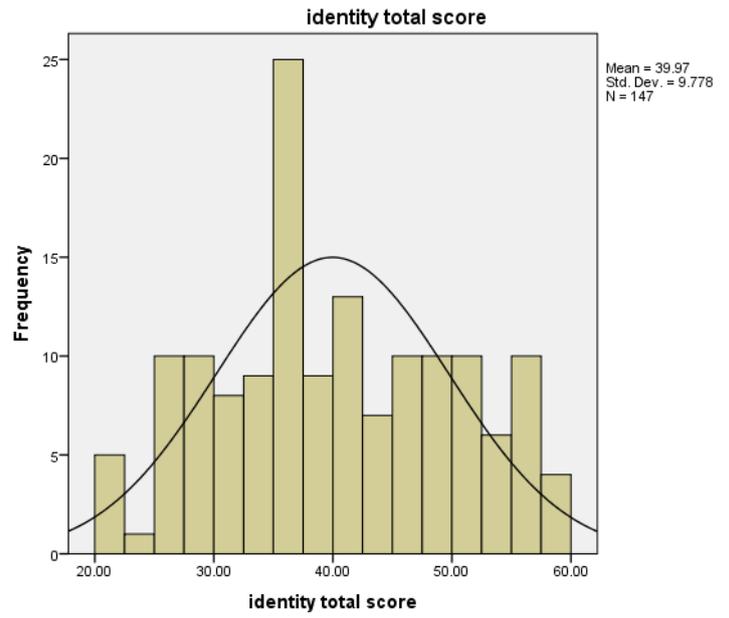


Figure P6. Distribution of identity scores (EPSI)

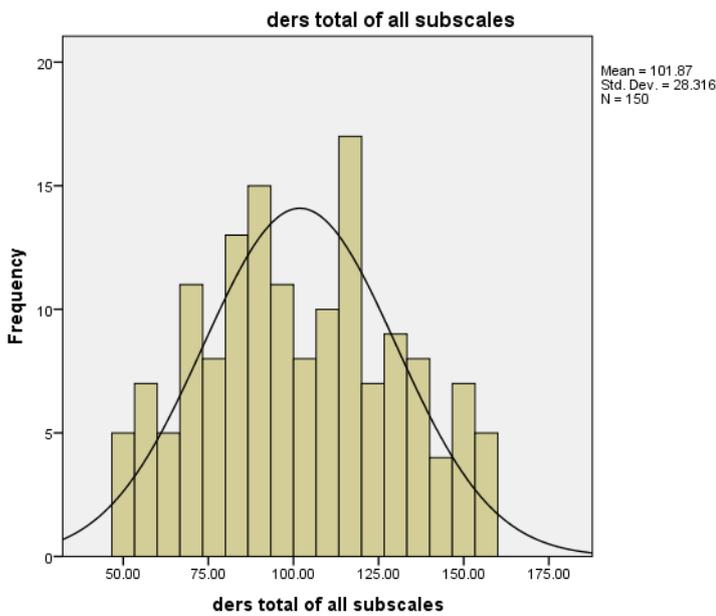


Figure P7. Distribution of emotion dysregulation scores (DERS)

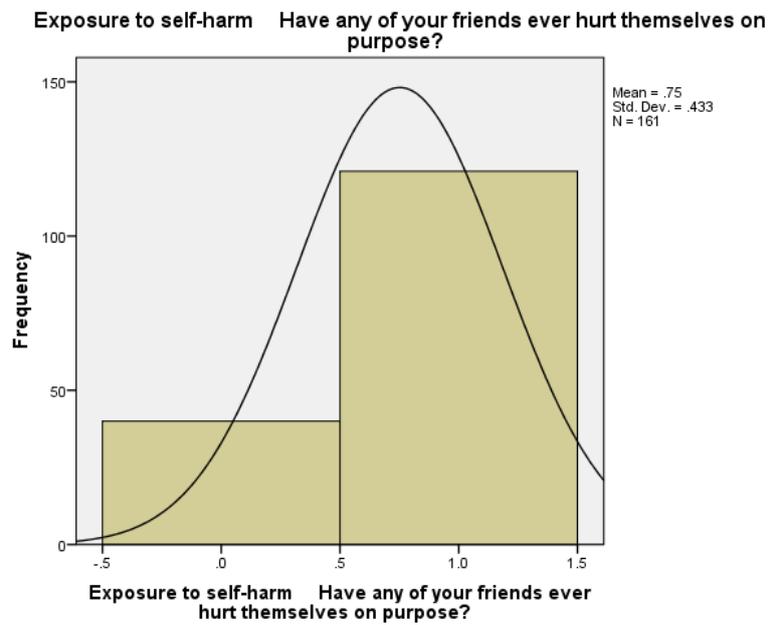


Figure P8. Distribution of exposure to self-harm scores

Table P1

*Skewness and Kurtosis Z scores for Key Variables*

Variable	Skewness z score	Kurtosis z score
Goth/Metal	14.75***	19.86***
Emo/Punk	8.78***	9.28***
Gamer/Nerd	7.11***	3.45***
Popular/Sporty	4.64***	0.54
Depression	2.26*	-2.68**
Identity	0.49	-2.15*
Emotion Dysregulation	0.58	-2.13*
Exposure	-6.15***	-1.65

*Note.* \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . Skewness and Kurtosis scores of significance indicate that data is not normally distributed (Field, 2005).

Table P2

*Results of the Shapiro-Wilk Test of Normality*

Variable	Statistic	<i>df</i>
Goth/Metal	.52*	167
Emo/Punk	.81*	167
Gamer/Nerd	.84*	167
Popular/Sporty	.90*	167
Depression	.92*	144
Identity	.97*	147
Emotion Dysregulation	.98*	150
Exposure	.54*	161

*Note.* \*  $p < .05$  indicates data is not normally distributed

## Appendix Q

### Song Lyrics (to illustrate self-harm content)

#### **AYRIA - "Cutting":**

I'm cutting myself  
Because I cannot face  
The world around me  
Is nothing  
I'm cutting up myself  
Because there's no way out  
Dispersing what I feel  
So I feel nothing

#### **JACK OFF JILL - "Strawberry Gashes":**

Watch me fault her  
You're living like a disaster  
She said kill me faster  
with strawberry gashes all over

#### **PAPA ROACH – "Scars":**

I tear my heart open  
I sew myself shut  
My weakness is  
That I care too much  
My scars remind us  
That the past is real  
I tear my heart open  
Just to feel

#### **FOO FIGHTERS – "Razor":**

Sweet and divine  
Razor of mine  
Sweet and divine  
Razorblade shine

Day after day  
Cutting away  
Day after day  
But anyway

**LINKIN PARK - "Breaking the Habit":**

Memories consume  
Like opening the wound  
I'm picking me apart again  
You all assume  
I'm safe here in my room  
Unless I try to start again

**NINE INCH NAILS – "Hurt":**

I hurt myself today  
To see if I still feel  
I focus on the pain  
The only thing that's real

The needle tears a hole  
The old familiar sting  
Try to kill it all away  
But I remember everything