In recent years, a large body of literature has highlighted numerous health concerns in regards to students of the higher education population, with a large focus on people’s experiences of mental health problems. As such, research has found large numbers of university students to have experienced mental health problems, with the numbers said to be progressively increasing (Castillo & Schwartz, 2013). Research has also found mental health problems within this sample to be increasing in severity, this being additionally reflected in the considerable number of students who seek help from counselling services within these institutions (Hunt & Eisenberg, 2010). In particular, university students are significantly at risk from developing mental health issues, argued to be partly due to the distress of moving away from home, the extensive studying which is a part of university living (Sarokhani et al., 2013), as well as academic stress which students experience (Agolla & Ongori, 2009). Whilst university can be pleasurable for some, it can also be perceived as a stressful life event for students (Wong, Brower, & Zucker, 2011), whereby maintaining good grades, forming social bonds, living away from home, as well as having to contemplate about the future can precipitate feelings of anxiety (Buchanan, 2012), depression (Adewuya, Ola, Aloba, Mapayi, & Oginni, 2006), and suicidality (Duane, Stewart, & Bridgeland, 2003). As part of this, students who suffer from symptoms of depression are more likely to be classed as at risk from suicidality (Izadinia, Amiri, Jahromi, & Hamidi, 2010).

The umbrella term of ‘suicidality’ can be defined as any form of suicide-related ideations, behaviours and intent, which each increase the risk of death by suicidal circumstances (O’Dea, Wan, Batterham, Calex, Paris & Christensen, 2015). The word ‘suicidality’ encompasses the main aspects of what is involved within a suicidal death (Meyer et al., 2010). Firstly, suicidal ideation, also more commonly known as suicidal feelings, can be defined as thoughts regarding the ending of one’s life. Differing from this, suicidal behaviours involve acts of self-harm, with the view of ending one’s life (Goldsmith, Pellmar, Kleiman, & Bunney, 2002). Suicidality has more recently been described as a continuum, which begins with suicidal thoughts and, in some cases, ends with a suicide attempt (Baca-Garcia et al., 2011). Suicidal beliefs are recognised as early symptoms of future suicidal behaviours, and are ultimately known to play a central part in the attempt of suicide (Gili-Planas, Bennasar, Ferrer-Perez, & Bernardo-Arroyo, 2001). Although early research suggests that most people who have thoughts of suicide do not go on to make suicidal attempts (Gliatto & Rai, 1999), a more recent study found that 50% of planned suicide attempts tended to occur within a year of having previous suicidal feelings (Joe, Canetto, & Romer, 2008). In similar argument, Gili-Planas et al. (2001) believe that suicidal ideation is the first step to suicide, and further research suggests that such ideation increases an individual’s risk of death by suicidal method (McAuliffe, 2002).

A broad range of research suggests that suicide is the most leading cause of death within university student based samples (Schwartz, 2006), indicating that university students are significantly more at risk from death by suicidal circumstances. In regards to the empirical
evidence, numerous recent studies have found suicidal thoughts to be particularly common in university students (Eisenberg, Gollust, Golberstein, & Hefner, 2007). Furthermore, Wilcox et al. (2010) found that during university years, 12% of a student sample expressed suicidal ideation, with 2.6% of them having experienced repetitive suicidal thoughts. More recently, the American College Health Association (2011) reported that 3.7% of university students had considered suicide in the last 12 months, with 2.9% of the sample expressing self-harm behaviours such as cutting or burning. Taking these findings into account, it seems crucial to understand the development of such suicidality in university students in view of preventing future death by suicide (Garlow et al., 2008).

Although the majority of research has provided a focus on how mental health distress within university students can be assessed as well as treated, recent studies have begun to investigate the predictors of the distress which some students face. For example, a study by Stamp, Crust, Swann, Perry, Clough and Marchant (2015) found mental toughness (MT) to be a significant predictor of psychological wellbeing in undergraduate university students, with higher MT levels relating to better overall wellbeing outcomes. Briefly, MT can thus be defined as a combination of positive psychological traits which assist in the ability to cope with and manage stress successfully (Clough, Earle, & Sewell, 2002). Although MT has been conceptualized in a variety of ways, a prominent approach in health psychology is the 4C’s model presented by Clough et al. (2002). This particular approach to MT involves the existence of four positive psychological variables; commitment (determination in completing tasks, despite problems which may arise), challenge (seeking opportunities and viewing them as being positive rather than threatening), control (belief that one has ability to shape their life and manage emotions), and confidence (the extent that one believes in their own ability and interpersonal circumstances). In university students and adolescents, lower levels of MT have also been previously related to the heightened onset of depressive symptoms within students in a variety of different studies (Gerber et al., 2015), suggesting that university students are an at-risk sample from developing symptoms of depression.

The purpose of the present study was to examine the extent to which MT statistically predicts suicidality in a sample of students. It was hypothesized that MT would be a significant negative predictor of suicidality after controlling for demographic variables.

Method

Participants

A sample of 166 (male n = 53, female n = 113) university students aged 19-64 (M = 27.16, SD = 9.31) from the UK universities was recruited using an online survey. The sample comprised of one foundation year student, 15 first year students, 15 second year students, 66 taught postgraduate students, and 49 research postgraduate students.

Measures

Mental Toughness

The Mental Toughness Questionnaire-18 (MTQ18; Clough et al., 2002) was used to assess MT. This short form of the MTQ48 unidimensional assessment of MT using three items from each of the six scales in the MTQ48. Responses are recorded on a five-point Likert-type scale anchored by 1 (Strongly Disagree) to 5 (Strongly Agree). The MTQ48 has been rigorously tested for factorial validity in a sample of over 8,000 (Perry, Clough, Crust, & Nicholls, 2013), demonstrating acceptable properties. Gerber et al. (2015) demonstrated a strong correlation between the MTQ18 and MTQ48 (r = .87).

Suicidality

The Suicidal Behaviors Questionnaire-Revised (SBQ-R; Osman, Bagge, Gutierrez, Konick, Kooper & Barrios, 2001) was used to measure four elements of suicidal risk; lifetime suicidal ideation and attempts, frequency of past suicidal ideation, the threat of suicidal behaviour, and thoughts about future suicidal behaviour. Overall responses should range from 3-18, with a higher score indicating higher suicidality. Each item is worth between three and six points depending on how many choices the item has. Each item has an individual scale, and each response corresponds to a certain point value. The SBQ-R is a shortened version of the 34-item
SBQ (Linehan & Nielsen, 1981). It has previously demonstrated acceptable internal consistency reliability (α = 0.87) in adolescent and adult clinical and nonclinical samples, as well as high internal consistency within a sample of university students and good criterion-related validity (Osman et al., 2001).

**Procedure**

Following ethical approval from a UK Higher Education Institution, participants who responded to and chose to complete the online survey, created using Bristol Online Surveys (BOS), were required to follow an online link that directed them to the questionnaire. Participants completed an eligibility form prior to give informed consent. If a participant selected the ‘No’ option in regards to wishing to provide consent, they were redirected away from the online survey. Total questionnaire completion took approximately 5-10 minutes. No remuneration was offered for participation.

**Data analysis**

Descriptive statistics were used to examine missing data, outliers, and univariate normality. Omega point estimates and bootstrapped confidence intervals assessed internal consistency as recommended by Dunn, Baguley, and Brunsden, (2013). A multiple linear regression model was examined to determine the extent to which MT was predictive of suicidality. Demographic variables were controlled for by entering gender, year of study, and age into block one, with MT entered at block two.

**Results**

Preliminary analyses found no outliers in the data and there were no missing data. Descriptive statistics indicated no significant deviation from a normal distribution for MT (k-s(166) = .50, p = .20). Suicidality however, presented a positive skew (k-s(166) = .17, p < .001). Omega point estimates and confidence intervals were calculated using the MBESS package (Kelley & Lai, 2012), in R (R Development Core Team, 2012), with 1,000 bootstrap samples. MT presented good internal consistency (ω = .88, SE = .014, 95% CI = .85, .91), as did suicidality (ω = .86, SE = .020, 95% CI = .82, .90). Spearman’s bivariate correlation with bootstrap indicated a moderate negative correlation between MT and suicidality (rs = -.43, p < .001, 95% CI = -.55, -.30).

Descriptive data by year of study is presented in Table 1 (p. 47). A one-way ANOVA revealed significant differences by year of study for both MT (F(4,160) = 3.39, p = .011) and suicidality (F(4,160) = 4.21, p = .003). Post-hoc tests indicated that observed differences were that for MT, first year students were significantly less mentally tough than taught postgraduates (Mdiff = -8.23, p = .043, 95% CI = -16.29, -18). For suicidality, second year students scored significantly higher than third years (Mdiff = 4.25, p = .001, 95% CI = 1.22, 7.23), taught postgraduates (Mdiff = 2.95, p = .014, 95% CI = .41, 5.48), and research postgraduate students (Mdiff = 3.28, p = .006, 95% CI = .66, 5.89). An independent-samples t-test indicated that males scored slightly higher in MT (t(164) = -2.06, p = .04, Mdiff = -3.59, 95% CI = -.72, -.22), but there was no significant difference in suicidality (t(164) = .31, p = .76, Mdiff = .17, 95% CI = -.99, 1.26).

Multiple linear regression analyses presented an insignificant ΔR² for model one (F(3,162) = 1.07, p = .36), which inserted gender, year of study, and age as predictors of suicidality. Model two however, which inserted MT as a predictor variable, presented a significant ΔR² of .20 (F(4,161) = 10.97, p < .001). In total, 21.4% of variance of suicidality was accounted for. Table 2 (p. 47) presents individual coefficients from the models. MT (β = -.46, t = -6.32, p < .001) was the only statistically significant predictor of suicidality.

**Discussion**

The aim of this study was to investigate the extent to which suicidality was statistically predicted by MT in a student sample. The results confirmed that MT can be considered a predictor of suicidality, explaining 21.4% of the variance. In terms of suicidality, results also found that students within second year exhibited higher suicidality levels, a finding that it also consistent with recent research (Macaskill, 2013). This adds to the suggestion that second year of university is more psychologically challenging, due to a number of different factors that have been past discussed (Nelson et al., 2013). Moreover, this present study has extended previous research (Stamp et al., 2015) by revealing that MT is also
directly related to suicidality in university students. The present findings therefore add to the view that MT is an important resource in everyday life, relating to mental health and psychological functioning (Clough & Strycharczyk, 2012).

Although MT explained a significant amount of suicidality variance, there remains a large proportion of unexplained variance. This suggests that there are other factors that predict suicidality, apart from age, gender and year of university study. These may include previously discussed factors such as being from the LGBT community (Silenzio et al., 2007), having attachment issues (Bowlby, 1973), experiencing depression (Garlow, 2002), experiencing chronic health conditions such as HIV and cancer (Bryan & Rudd, 2005), as well as body image issues and substance abuse (du Roscoät et al., 2016). Besides this, there are also some critical implications in regards to the present study, which are worthy of being discussed. Firstly, in view of assessing students who present themselves to support services at university, it may be important to consider MT as mediating risk of suicidality. Previous research shows that having high MT helps individuals cope and manage everyday problems with students being less resilient to the demands of university education with lower MT (Gucciardi & Gordon, 2011). A low MT level can therefore mean that individuals are less able to cope with their challenges, which has shown to exhibit relations with higher risk of suicide. Due to this, and as the current findings seem to suggest that exhibiting a higher MT may protect one from suicidality, it may be important to incorporate MT training into suicide treatment programmes.

As a small, cross-sectional study, it is important to acknowledge several limitations. Firstly, there was no control for distractions, or whether or not other people were present whilst a student was completing the online survey. This poses the question as to whether social desirability may have also been an issue, something of which is considered as a significant weakness of questionnaire based research.

In regard to the present findings, it would be particularly useful for future researchers to extend these findings, by investigating further predictors of suicidality within the university population. This could then possibly lead to the creation of interventions, specifically catered to university students that can help reduce the distress that may be leading to their suicidal risk. Moreover, the impact of these interventions, especially in regards to students who present with low MT scores, could be examined for the impact they have on successfully reducing suicidality as well as increasing MT. It would therefore be useful to extend MT interventions to different contexts, rather than the already limited research that is available within the sporting arena (Sheard & Golby, 2006). Lastly, it also seems important to take a focus on second year university students and their suicidal risk, due to the fact that this paper adds to previously documented findings on the suicidality of second year university students. Within this, this specific year group could be targeted in terms of being made more aware of universities support and wellbeing services.

In summary, the present study is the first to examine an empirical link between MT and suicidality in university students. Findings supported the hypothesis that MT is a significant, negative predictor of suicidality. It is recommended that further research examines the potential of MT interventions to reduce suicidality in students and particularly target at-risk groups.

References


### Table 1

**Descriptive data by year of study**

<table>
<thead>
<tr>
<th></th>
<th>UG Year 1 (n = 15)</th>
<th>UG Year 2 (n = 15)</th>
<th>UG Year 3 (n = 20)</th>
<th>PG Taught (n = 66)</th>
<th>PG Research (n = 49)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT</td>
<td>49.27 (10.33)</td>
<td>50.60 (12.51)</td>
<td>58.50 (10.33)</td>
<td>57.50 (10.50)</td>
<td>56.65 (8.90)</td>
</tr>
<tr>
<td>Suicidality</td>
<td>7.00 (3.49)</td>
<td>9.10 (3.68)</td>
<td>5.15 (2.30)</td>
<td>6.46 (3.48)</td>
<td>6.12 (2.90)</td>
</tr>
</tbody>
</table>

**Note.** UG = Undergraduate, PG = Postgraduate

### Table 2

**Multiple linear regression summary with suicidality as dependent variable**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>$\beta$</th>
<th>t</th>
<th>p</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.02</td>
</tr>
<tr>
<td>Gender</td>
<td>-.17</td>
<td>(.123, .98)</td>
<td>-.02</td>
<td>-.30</td>
<td>.77</td>
<td></td>
</tr>
<tr>
<td>Year</td>
<td>-.28</td>
<td>(.78, .12)</td>
<td>-.11</td>
<td>-1.32</td>
<td>.21</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.02</td>
<td>(.07, .04)</td>
<td>-.06</td>
<td>-.72</td>
<td>.44</td>
<td></td>
</tr>
<tr>
<td><strong>Model 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.20</td>
</tr>
<tr>
<td>Mental toughness</td>
<td>-.15</td>
<td>(.19, -.10)</td>
<td>-.46</td>
<td>-6.32</td>
<td>&lt;.001</td>
<td></td>
</tr>
</tbody>
</table>

The journal, published by SHEU since 1983, is aimed at those involved with education and health who are concerned with the health and wellbeing of young people. Readership is worldwide and in the UK include: primary; secondary and further education teachers; university staff and health-care professionals working in education and health settings. The journal is online and open access, continues the proud tradition of independent publishing and offers an eclectic mix of articles.

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