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An examination of the Entrapment Scale: Factor structure, correlates, and implications for suicide prevention

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ABSTRACT

Entrapment is an emerging theoretical and empirical factor associated with suicide. The current study expanded our understanding of entrapment by examining the Entrapment Scale factor structure, demographic correlates, and association with suicidal thoughts and behaviors (STBs). Data from an online cross-national study of suicide were analyzed from two samples of young adults aged 18–34 (United Kingdom [U.K.] sample $N = 418$; United States [U.S.] $N = 414$). Primary findings included: (1) factor-analytic support for a two factor (i.e., internal and external) Entrapment Scale structure; (2) variation in external entrapment subscale factor loadings by sample; (3) significant demographic correlates of elevated entrapment of younger age, female gender, and U.S. sample; (4) significant convergent positive associations for both entrapment types with cognitive (e.g., perceived burdensomeness), mental health (e.g., anxiety), and STB correlates; and (5) significant, robust associations of internal entrapment and perceived burdensomeness with STBs in the U.K. sample. Implications are reviewed for suicide prevention theory, research and practice.

1. Introduction

Cognitively-based psychological models of suicide point to the potential importance of negative cognitive styles in fostering vulnerability for suicidal ideation (SI). For example, the Interpersonal Theory of Suicide (Joiner, 2005; Van Orden et al., 2010) posits that SI develops at the intersection of thwarted belongingness (feelings of social disconnection and lack of reciprocal caring) and perceived burdensomeness (belief that one's existence strains others). This SI escalates to suicidal desire when these interpersonal states are believed to be hopelessly intractable, potentially manifested in cognitions such as "I might as well give up because in the future I will make things worse for others" (Tucker et al., 2018; Van Orden et al., 2010). Additionally, cognitive models of suicide specify the importance of related suicide-specific emotions, such as hopelessness and perceptions of psychological pain being unbearable (Bryan and Rudd, 2018; Klonsky and May 2014; Wenzel and Beck, 2008).

One specific cognitive-affective state has been proposed to be an important contributor of SI is that of entrapment. In terms of cognition, entrapment can be defined as the belief that one is unable to change undesirable life circumstances, including oneself and contingencies around the self (Gilbert and Allan, 1998). Reflecting an intricate cognitive-affective construct, entrapment further consists of an emotional state of urgency to flee or escape said undesirable self-focused or social-defined conditions (Gilbert and Allan, 1998). This construct was initially introduced to the suicidology literature in the late 1990s as it was embedded in the study of the arrested flight model to explain vulnerability to depression and SI (Gilbert and Allan, 1998; Williams, 1997; Williams and Pollock, 2000). Entrapment was later incorporated in the integrated motivational-volitional (IMV) model of suicide (O'Connor, 2011; O'Connor and Kirtley, 2018). The former theory proposed that individuals who do not perceive a way of escaping undesirable, painful circumstances will develop the belief that suicide will provide such relief or escape. The IMV posits that feelings of entrapment mediate the relationship between feelings of defeat and SI, with these paths being attenuated and exacerbated by additional cognitive, interpersonal, and behavioral constructs (i.e., threat to self and motivational moderators).

Evidence for these hypotheses in the extant literature can clearly be seen (Dhingra et al., 2015; O'Connor and Portzky, 2018; Taylor et al., 2011). For example, O'Connor et al. (2013) found that pre-discharge levels of entrapment predicted suicide attempt status at four-year follow-up in a longitudinal sample of adult patients hospitalized after a suicide attempt. Notably, entrapment remained a significant predictor

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of suicide attempt status when SI, symptoms of depression, and hopelessness were simultaneously considered. Entrapment has also shown relevance to understanding the path from sleep disturbance to suicidal ideation among adolescents from the United Kingdom (U.K.); entrapment mediated the association of aspects of sleep disturbance (i.e., nightmares, insomnia) to suicide ideation (Russell et al., 2018). Finally, a 2015 meta-analysis indicated a moderate relationship between suicidal thoughts and behaviors (STBs) and entrapment. This relationship was stronger than the defeat-STB relationship (Siddaway et al., 2015). This study was unable to differentiate the entrapment construct into external versus internal perceptions, however. Only recently, network analytic evidence from the Scottish Wellbeing Study demonstrated that internal, but not external, entrapment demonstrated a robust association with suicidal ideation among Scottish young adults (ages 18–34) (De Beurs et al., 2019). Our study furthers investigation of the entrapment-suicide connection through cross-national young adult sampling. Entrapment shows robust linkages with STB outcomes; however, the present study tests this link accounting for a number of other factors, expecting that entrapment will remain associated with entrapment even in the presence of other cognitive, mental health, and demographic covariates.

The construct of entrapment has demonstrated enough empirical relevance that scholars believe it may be a central experience of those amid a suicidal crisis. The proposed suicide crisis syndrome (SCS; Galynker et al., 2017) denotes that feelings of entrapment and inability to flee undesirable intra/interpersonal circumstances are central to the diagnosis of the syndrome. Specifically, the SCS entails symptoms of entrapment, altered sensation associated with panic (panic/dissociation), ruminative flooding, fears of dying, and emotional pain. Research has provided some evidence for the clinical relevance of the SCS, as symptoms have been found to predict STBs post-discharge from inpatient care (Galynker et al., 2017). Moreover, SCS symptoms mediate the relationship between distal predictors of suicide (e.g., adverse childhood events) and STBs (Cohen et al., 2018). Further, of SCS symptoms, entrapment explained the association of other cognitive symptoms (e.g., fear of dying, rumination) and SI (Li et al., 2018). This proposed entity is not currently integrated into diagnostic manuals or regular clinical practice but is accumulating evidence as a potential needed addition (Joiner et al., 2018).

1.1. Factor structure of the Entrapment Scale

Across psychological models of suicide and suicide-specific diagnostic entities, scholars point to the relevance of entrapment. In further pursuits to determine the accuracy of these conjectures, the field may benefit from a clearer definition, and, thus, assessment of the construct. Feelings of entrapment, particularly in the context of cognitively-based psychological models of suicide, are most commonly assessed via the self-report Entrapment Scale (E-Scale; Gilbert and Allan, 1998). This scale was initially subjected to psychometric evaluation and demonstrated two subscales (sub-components) of entrapment. External entrapment can be defined as the sense that one is unable to escape externally derived, undesirable life circumstances (e.g., interpersonal or economic dysfunction), whereas internal entrapment can be defined as the perceived inability to change an undesirable aspect of oneself. Subsequent use of this measure has demonstrated inconsistent solutions, most notably that entrapment may be a unified construct, not clearly distinguished by two interrelated sub-components. For example, Tucker et al. (2016) demonstrated superior model fit for a single factor solution of the E-Scale compared to a two-factor model in a sample of young adults selectively sampled for history of SI. As research into vulnerability for SI as well as states of acute suicidality progress, further enhancement of what entrapment is, and how it can best be measured, will likely be an important consideration in producing work that meaningful enhances suicide risk assessment and prevention efforts.

One way in which this work can progress is through efforts to examine factor structure and convergent/divergent validity of the measure through cross-cultural investigations. Comparison studies such as these help determine whether groups of individuals prescribe similar meaning to items and is a crucial vein of investigation regarding psychological phenomenon (Chen, 2008; Milfont and Fischer, 2010). Although a comparative study of entrapment has not been completed, this has been recommended in the extant literature (O'Connor and Portzky, 2018), and isolated studies in different countries do point to the relevance of this line of investigation. A selected sample of U.S. young adults with a history of suicide ideation demonstrated the superiority of the single-factor structure (Tucker et al., 2016). Analyses performed in young adults from the U.K. demonstrate more support for the two-factor solution that includes internal and external entrapment (Gilbert and Allan, 1998). Finally, evidence emerging across community and clinical samples in Germany support a two-factor entrapment structure, as well as psychometric support that entrapment and defeat are distinct yet conceptually related constructs (Forkmann et al., 2018). The extant literature indicates the potential fruitfulness of cross-cultural studies and, as noted by O'Connor and Portzky (2018), is a needed line of investigation. The open question of factor structure remains in need of further examination; the present study explores best fitting E-scale factor structure in U.K. and U.S. adult samples. Further, using the best fitting model, the present investigation examined measurement invariance through testing whether item loadings varied by U.K. versus U.S. sample.

1.2. Correlates of the Entrapment Scale

Although O'Connor and Portzky (2018) articulate a need for cross-cultural investigations of entrapment, the authors also note a need for understanding how entrapment may differ across demographic groups. This rationale certainly corresponds with epidemiological and theoretical studies that indicate age, gender, and racial differences in STBs as well as their correlates (e.g., Drapeau and McIntosh, 2017; Klonsky and May 2014; Wolford-Clevenger et al., 2018). For example, Black adults endorse higher levels of both risk and protective factors of suicide compared to White adults, but death by suicide is higher in White adults (Davidson and Wingate, 2011). Using data from 21 countries, Borges et al. (2010) demonstrates elevated 12-month prevalence STB risk was associated with female sex and younger age. While we know much about STB demographic risk, little has been done with respect to demographic differences in entrapment. Given the strong link between entrapment and STB, it seems reasonable to expect similar demographic patterns. As such, it is expected that demographics of younger age, female or gender minority, and racial minority status may be associated with higher entrapment.

The concept of entrapment focuses on the impact of blocked or arrested flight behaviors (Dixon, 1998; Gilbert, 2001), and is associated with stressful life events or circumstances that are particularly chronic (Brown et al., 1995). However, entrapment also involves psychological processes relating to a person's perceptions of their circumstances as being uncontrollable and inescapable (Gilbert and Gilbert, 2003). Given the complexity of the construct, and the mixed findings in relation to the distinction between internal and external entrapment, we wished to examine further the diversity in experiences of entrapment in relation to a number of theoretically-derived risk factors. Previous literature has investigated entrapment's relationship with a variety of theoretically-derived risk factors for suicide (e.g., thwarted belongingness and perceived burdensomeness), mental health symptoms (e.g., depression and anxiety), and stress-related factors such as perceived stress and perfectionistic attitudes (O'Connor, 2011; Taylor et al., 2011; Thompson and Swartout, 2018; Willner and Goldstein, 2001). Generally, entrapment is a risk factor for suicide-related cognitions, stress, mental health symptoms, and other negative outcomes. These correlates serve as potential indicators of convergent validity in studies of entrapment. Consistent with this prior literature, we expected entrapment (as

reflected by the best fitting factor structure) to be positively associated with the following set of convergent validity factors: negative cognitions (i.e., defeat, thwarted belonging, perceived burdensomeness, and perfectionism), mental health symptoms (i.e., depression, anxiety, and general distress), and STBs.

1.3. The present study

The current study investigated the factor structure and validity of the Entrapment Scale in similarly derived samples of young adults from the U.S. and the U.K. The study specifically aimed to determine: (a) which E-Scale factor structure demonstrated better fit to the data across samples; (b) the extent to which the best fitting facture structure correlated with expected demographic, suicide-, mental health-, and cognitive-related correlates; and (c) whether the best fitting entrapment factor structure predicts STBs accounting for demographic, mental health, and cognitive covariates. Doing so holds critical implications for cognitively-based models of suicide in terms of how entrapment should be measured in suicide and clinical research moving forward. Clinically speaking, questions concerning best fitting factor structure and association with suicide risk holds implications for the manner in which SCS (Galynker et al., 2017) may be conceptualized and treated.

Given mixed evidence in the literature concerning E-Scale factor structure, the present study examined the following research questions (RQs):

RQ1: The present study explored which factor structure (i.e., single factor versus two-factor model) demonstrated better fit to the data across samples. Additionally, measurement invariance was examined to assess possible factor loading variation by sample.

Consistent with literature reviewed and expectations concerning E-Scale validity, we examined the following hypotheses:

H1: Higher entrapment will be associated with younger age, as well as gender- and racial-identifying minority persons.
H2: Entrapment will be positively correlated with negative cognitions (i.e., defeat, thwarted belonging, perceived burdensomeness, and perfectionism), mental health symptoms (i.e., depression, anxiety, and general distress), and STBs.
H3: Controlling for demographic, cognitive, and mental health covariates, entrapment will demonstrate significant positive and moderately sized associations with an STB total score and binary indicator of overall elevated suicide risk.

2. Methods

2.1. Procedure

Ethical approval was obtained from three institutional ethics review boards (one U.K. and two U.S.) before commencing the study. Informed consent was obtained from all individual participants included in the study. Participants provided informed consent prior to beginning the questionnaire, and received a debriefing sheet at the end of the study which included relevant local and national support resources. Data were collected simultaneously across the two countries, and questionnaires were completed online through Qualtrics. In the U.S., data were collected using Qualtrics panels, whereas recruitment in the U.K. included snowball recruitment via online advertisements through social media and posters with links to the survey.

2.2. Subjects

Young adults (defined as ages 18–34) were drawn from two samples: one from the U.K. and one from the U.S. Table 1 contains the full sample demography. Both samples possessed mid-twenties average age, and were relatively homogenous with respect to gender (more than three-quarters female). The U.K. sample contained little racial diversity, whereas the U.S. sample was somewhat racially diverse (still majority White).

Table 1
Descriptive statistics by sample (United Kingdom versus United States).

Variable	U.K. sample	U.S. sample
Race		
White (U.S.)	–	262 (63.3%)
Anglo/Caucasian/British/Scottish (U.K.)	391 (93.5%)	–
Asian	8 (1.9%)	12 (2.9%)
Black	–	51 (12.3%)
Latino/a	1 (0.2%)	36 (8.7%)
Native American/Pacific Islander	–	8 (1.9%)
Multiracial	1 (0.2%)	19 (4.6%)
Indian	6 (1.4%)	–
Pakistani	4 (1.0%)	–
Other (e.g., other unspecified)	10 (2.4%)	6 (1.4%)
Missing/declined to state	1 (0.2%)	20 (4.8%)
Gender		
Male	82 (19.6%)	98 (23.7%)
Female	325 (77.8%)	297 (71.7%)
Transgender	10 (2.4%)	4 (0.9%)
Not sure	1 (0.2%)	1 (0.2%)
Missing/declined to state	–	14 (3.4%)
Age	23.40 (4.15)	26.50 (4.75)
External entrapment	13.77 (10.69)	17.09 (10.78)
Internal entrapment	9.19 (8.37)	10.71 (7.27)
Defeat	25.39 (16.13)	29.99 (13.94)
Suicidal thoughts and behaviors total score	7.51 (4.20)	6.53 (3.75)
Perceived burdensomeness	13.74 (9.90)	20.60 (10.61)
Thwarted belongingness	27.06 (13.07)	32.09 (9.75)
Depression	8.15 (6.59)	9.31 (5.89)
Anxiety	7.32 (5.86)	8.64 (5.60)
Stress	10.12 (5.69)	9.83 (5.30)
Social perfectionism	56.61 (16.29)	64.14 (11.75)
Self-oriented perfectionism	68.76 (18.26)	65.38 (12.67)

Notes: U.K. = United Kingdom sample (N = 418); U.S. = United States sample (N = 414); Continuous variables = Mean (standard deviation).

2.3. Measures

2.3.1. Demographics

All participants completed questions concerning gender, age and race. Participants were allowed to write-in their racial identity; these were subsequently re-classified under subgroupings (see Table 1). Gender response options were male, female, transgender, other (with space to self-identify). Decline to state options were also available.

2.3.2. The Entrapment Scale (E-Scale; Gilbert and Allan, 1998)

The E-Scale assesses the extent to which one feels imprisoned or trapped by their thoughts, emotions, and circumstances. This 16-item measure requires respondents to score the extent to which each statement represents oneself from 0 (not at all like me) to 4 (extremely like me), with greater scores reflecting greater levels of entrapment. No particular recall time period is indicated in the measure instructions. Importantly, it was developed to capture two different types of entrapment; external entrapment (EE; e.g., “I can see no way out of my current situation”), which relates to perceptions of entrapment by external situations, and internal entrapment (IE; e.g., “I would like to escape from my thoughts and feelings”) which refers to perceptions of entrapment by one's own thoughts and feelings. Entrapment has been found to be a clinically significant predictor of a number of mental health outcomes including suicidality, anxiety, depression, and PTSD (Siddaway et al., 2015). The E-Scale has consistently been found to have good psychometric properties. For example, Gilbert and Allan (1998) found that it ranged from 0.86 to 0.89 in depressed individuals. The E-Scale has also been found to have good test-retest

reliability (Taylor et al., 2011; Panagioti et al., 2015). Internal consistency values for the present study are reported in the results section. A full version of the E-Scale can be found in the online supplement Appendix.

2.3.3. The defeat scale (D-Scale; Gilbert and Allan, 1998)

The D-Scale examines one's sense of failure and diminished social rank over the last week. This is a 16-item measure scored via 5-point scales ranging from 0 (never) to 4 (always). An example question is "I feel defeated by life". This measure has been extensively used in research and has documented strong psychometric properties (e.g., Wetherall et al., 2018). Internal consistency for the U.K. ($\alpha = 0.96$) and U.S. ($\alpha = 0.93$) samples was high.

2.3.4. The suicide behaviors questionnaire-revised (SBQ-R; Osman et al., 2001)

The SBQ-R is a 4-item measure assessing lifetime STBs (item 1 – "Have you ever thought about or attempted to kill yourself?"), frequency of SI in the past year (item 2 – "How often have you thought about killing yourself in the past year?"), lifetime expressed suicidal (item 3 – "Have you ever told someone that you were going to die by suicide, or that you might do it?"), and likelihood of future suicide attempt (item 4 – "How likely is it that you will attempt suicide someday?"). This measure was selected because it allows for a screen of historical STBs in a short administration. In the present study, item 1 classified participants into three groups: Those who reported no past suicidal behavior or thinking, those who reported past suicidal thinking but no behavior, and those who reported suicide attempt. In addition, in line with Osman et al. (2001) we used the recommended cutoff score of ≥ 7 (for adult general population) to identify community individuals/outpatients who met the clinical cut off score for suicide risk. Internal consistency for the U.K. ($\alpha = 0.84$) and U.S. ($\alpha = 0.82$) samples was acceptable.

2.3.5. The DASS-21 (Lovibond and Lovibond, 1995; Osman et al., 2012)

Psychological distress (depression, anxiety, stress) was measured using the DASS-21, which is a 21 item scale asking how often an individual relates to each statement over the past week, with 7 items for each of the three subscales (e.g., 'I found it hard to wind down' [stress], "I was aware of dryness of my mouth" [anxiety], and "I couldn't seem to experience any positive feeling at all" [depression]). Each item is scored on a scale from 0 to 3; 0 = "Did not apply to me at all," 3= "Applied to me very much or most of the time." Internal consistency values (U.K.; U.S.) for depression ($\alpha = 0.93$; 0.90), anxiety ($\alpha = 0.88$; 0.87), and stress ($\alpha = 0.88$; 0.86) were acceptable. Studies have supported the construct validity and internal consistency of the DASS-21 in non-clinical populations (e.g., Henry and Crawford, 2005).

2.3.6. Interpersonal needs questionnaire (INQ; van orden et al., 2012)

Thwarted belongingness and perceived burdensomeness were measured with the 15-item version of the Interpersonal Needs Questionnaire (INQ; Van Orden et al., 2012). The INQ assesses a respondent's current beliefs about feeling socially connected (i.e., thwarted belongingness; e.g., "I feel disconnected from other people") and feeling like a burden on others (i.e., perceived burdensomeness; e.g., "The people in my life would be better off if I were gone"). Seven items measure thwarted belongingness, and five items measure perceived burdensomeness. Items are rated on a Likert-type scale ranging from 1 ("not at all true of me") to 7 ("very true for me"), with higher scores reflecting higher levels of these constructs. The measure has consistently been found to demonstrate satisfactory estimates of internal consistency and concurrent validity (e.g., Gutierrez et al., 2016). Internal consistency values (U.K.; U.S.) in the present study for perceived burdensomeness ($\alpha = 0.95$; 0.94) and thwarted belongingness ($\alpha = 0.92$; 0.76) were acceptable.

2.3.7. The multidimensional perfectionism scale (MPS; Hewitt and Flett, 1991)

The MPS is a 45 item questionnaire which includes three aspects of perfectionism: self-oriented perfectionism, other-oriented perfectionism, and socially prescribed perfectionism. As only self-oriented and socially prescribed perfectionism have been consistently linked to suicide (e.g., Smith et al., 2018), we only included the 30 questions measuring these two sub-dimensions. Self-oriented perfectionism statements include: "When I am working on something, I cannot relax until it is perfect" and socially prescribed perfectionism includes statements such as "The people around me expect me to succeed at everything I do". The questions are rated using 7 point Likert-type scales ranging from 1 ("Disagree") to 7 ("Agree"), and has shown reliability and validity across numerous studies (e.g., Hewitt and Flett, 2004). Internal consistency values (U.K.; U.S.) in the present study for social perfectionism ($\alpha = 0.88$; 0.67) and self-oriented perfectionism ($\alpha = 0.91$; 0.76) were acceptable with the exception of the U.S. social perfectionism subscale.

2.4. Statistical analysis

E-Scale factor structures were tested using AMOS v. 24, featuring maximum likelihood estimation (MLE). MLE is appropriate for hypothesis testing or model comparison (Schmitt, 2011). A total of four models were run: a one factor and two-factor (i.e., internal and external entrapment) model, each in the U.K. and U.S. sample. Sample sizes of 400+ satisfy statistical power requirements for single and two-factor models and items per factor examined in the present study (Wolf et al., 2013). Internal (six items) and external (10 items) entrapment latent variables were allowed to correlate with one another given their high correlations in prior literature (Tucker et al., 2016). Fit index interpretation for quality of fit to the data was guided by established recommendations in the statistical literature (Kline, 2011; Schmitt, 2011). E-Scale invariance for the best fitting model was also examined using AMOS v. 24 via multi-group analysis (Byrne, 2004), and following general guidelines in the literature (Vandenberg and Lance, 2000). Overall model fit was examined for variation by sample (U.K. versus U.S.), with a significant X^2 test suggesting need for further item-level inspection. If variance in model fit was observed, each item factor loading was subsequently compared by sample. Determination of variance was achieved through additional examination of X^2 difference tests comparing an individual item loading by samples (with all other parameters constrained). A significant test suggests variation of a factor loading by sample.

Entrapment variation by demographics, and correlations with age, mental health, and other suicide-related constructs, were examined via Analysis of Variance (ANOVA; for between-groups differences in entrapment) or bivariate correlations (for continuous associations), with magnitude of effects being interpreted by Cohen's (1988) guidelines. Following statistical guidelines for the use of linear regression (Cohen et al., 2003) and logistic regression (Peng et al., 2002), these methods were used to test association of entrapment with SBQ-R total score and binary suicide risk score, respectively. For all regression modeling, demographic variables with low cell counts were either dropped or re-classified into categories for further dummy coding. For instance, in the U.K. sample, gender missing had an $n = 1$, and was therefore dropped. Race subgroups with low cell counts (e.g., Indian $n = 4$) were collapsed into an 'other' category. Guided by the statistical literature concerning magnitude of effects (Cohen, 1988; Chen et al., 2010), effect sizes employed were: (1) adjusted R^2 (model level) and partial eta-squared (variable level) for the linear regression model, and; (2) Cox & Snell R^2, and Nagelkerke R^2 (model level) and odds ratio (variable level).

Table 2
Entrapment scale confirmatory factor analysis (CFA) model fit statistics.

Model	X^2 (df), *p*-value	*X*/df	CFI	TLI	RMSEA (90% CI)	RMR	BIC
1. One factor (U.S.)	559.62 (104), $p < .001$	5.38	.91	.89	.10 (.09, .11)	.09	752.45
2. Two factor (U.S.)	410.97 (103), $p < .001$	3.99	.94	.93	.08 (.08., .09)	.07	609.83
3. One factor (U.K.)	852.66 (104), $p < .001$	8.20	.87	.85	.13 (.12, .14)	.11	1045.79
4. Two factor (U.K.)	487.00 (103), $p < .001$	4.73	.93	.92	.09 (.09, .10)	.08	687.17
5. Pooled two factor	739.97 (103), $p < .001$	7.18	.94	.93	.09 (.08, .09)	.08	961.86

Notes: df = Degrees of freedom; CFI = Comparative fit index; TLI = Tucker–Lewis Index; RMR = Root Mean Square Residual; BIC = Bayesian Information Criterion.

3. Results

3.1. RQ1: examination of the best fitting E-scale factor structure and measurement invariance

Table 2 contains model fit statistics for E-Scale factor structures across one and two factor solutions. Both the U.K. (poor fit) and U.S. (poor-to-marginal fit) one factor models displayed inadequate fit. On the contrary, both the U.K. and U.S. two-factor models displayed adequate-to-good fit based on: (1) CFI and TLI (i.e., ≥ 0.90), (2) RMSEA and RMR (i.e., <0.10), and (3) BIC (i.e., lower for two-factor compared to one factor models). In the U.K. two-factor model, factor loadings for internal (λ range = 0.86 to 0.91, all *ps* < .001; α = 0.95) and external (λ range = 0.37 to 0.84, all *ps* < .001; α = 0.93) entrapment were all significant and positive. In the U.S. two-factor model, factor loadings for internal (λ range = 0.79 to 0.85, all *ps* < .001; α = 0.93) and external (λ range = 0.55 to 0.80, all *ps* < .001; α = 0.93) entrapment were all significant and positive. Therefore, the two-factor solution was retained for further analyses for both the U.K. and U.S. samples.

Entrapment subscale scores were subsequently evaluated for variation by sample. Sample displayed small significant associations with both external ($T[830] = 4.54$, $p < .001$) and internal ($T[830] = 2.80$, $p = .005$) entrapment. U.S. respondents ($M = 17.09$, $SD = 10.78$, Cohen's $d = 0.31$, 95% CI = 0.17 to 0.44) demonstrated significantly higher levels of external entrapment compared to U.K. counterparts ($M = 13.77$, $SD = 10.69$). Further, U.S. respondents ($M = 10.71$, $SD = 7.27$, Cohen's $d = 0.19$, 95% CI = 0.06 to 0.33) demonstrated significantly higher levels of internal entrapment compared to U.K. counterparts ($M = 9.19$, $SD = 8.37$). All observed entrapment differences by country were small, however.

The pooled sample (U.K. and U.S.) E-Scale two-factor structure also demonstrated adequate-to-good fit (see Table 2 for fit statistics). Measure variation was observed in factor loadings by sample, X^2 (14) = 68.27, $p < .001$. Two E-Scale external entrapment subscale items demonstrated variation by sample: (a) Item 2 (i.e., "I have a strong desire to escape from things in my life."), X (1) = 10.37, $p = .001$; and (b) Item 3 (i.e., 3. "I am in a relationship I can't get out of."), X^2 (1) = 32.88, $p < .001$. For item 2, the U.K. sample factor loading ($\lambda = 0.84$, $p < .001$) was larger than in the U.S. sample ($\lambda = 0.74$, $p < .001$). For item 3, the U.S. sample factor loading ($\lambda = 0.55$, $p < .001$) was larger than in the U.K. sample ($\lambda = 0.37$, $p < .001$).

H1: Higher entrapment will be associated with younger age, as well as gender- and racial-identifying minority persons. Table 3 contains correlations of internal and external entrapment with age. Across samples, both forms of entrapment displayed expected significant yet small negative associations with age. Contrary to expectations, gender was unassociated with external entrapment in the U.S. ($F[2, 397] = 1.41$, $p = .25$) and U.K. ($F[2, 413] = 2.42$, $p = .09$) samples. Moreover, gender was unassociated with internal entrapment in the U.S. sample ($F[2, 397] = 0.30$, $p = .74$). Consistent with expectations, gender was associated with internal entrapment in the U.K. sample ($F[2, 413] = 4.99$, $p = .007$); Bonferroni post-hoc analyses showed a meaningful difference such that females ($M = 9.84$, $SD = 8.84$, $p = .005$; Cohen's $d = 0.39$) displayed significantly greater levels of internal entrapment compared to males ($M = 6.60$, $SD = 7.53$).

3.2. H2: entrapment will be positively correlated with negative cognitions, mental health symptoms, and STBs

In the U.K. sample, consistent with expectations, both forms of entrapment displayed significant moderate-to-large positive correlations with all negative cognitions with the exception of self-oriented perfectionism. In the U.S. sample, external entrapment demonstrated small (self-oriented perfectionism), moderate (social perfectionism, thwarted belonging), and large (perceived burdensomeness) positive associations with negative cognitions. Internal entrapment demonstrated small (thwarted belonging; self-oriented perfectionism; social perfectionism) or large (perceived burdensomeness) positive associations with negative cognitions. Consistent with expectations, across both samples, both forms of entrapment further displayed significant moderate-to-large positive correlations with mental health symptoms and total STBs.

3.3. H3: controlling for covariates, entrapment will demonstrate significant positive and moderately sized associations with an STB total score and binary indicator of overall elevated suicide risk

Table 4 contains linear regression model statistics predicting total STBs (i.e., SBQ-R total score) for the U.K. and U.S. sample, respectively. For the U.K. sample, the collection of predictor variables accounted for large variance in total STBs, $F(15, 400) = 47.72$, $p < .001$, Adj. $R^2 = 0.63$. The following significant effects were observed in the U.K. sample: (1) small significant positive effect of internal entrapment, and (2) moderate significant positive effect of perceived burdensomeness. However, inspection of Variance Inflation Factor (VIF) statistics showed a value of 5.03 for internal entrapment, which exceeds recommended conservative cut-off of 5.0 (Kutner et al., 2004). In order to investigate the role of multicollinearity of both types of entrapment, the regression model was therefore re-run twice: once dropping external entrapment and once dropping internal entrapment. The model with internal entrapment only yielded the same pattern of significant results and overall R^2, and an internal entrapment VIF < 5.0. The model with external entrapment only showed external entrapment remaining a non-significant predictor, the full model possessing a similar overall R^2, and all VIF values within acceptable ranges. Collectively, findings summarized in Table 4 held when multicollinearity was handled.

For the U.S. sample, the collection of predictor variables accounted for moderate variance in total STBs, $F(13, 364) = 9.63$, $p < .001$, Adj. $R^2 = 0.23$. The only significant effect observed in the U.S. sample was a small significant positive effect of external entrapment. However, the internal entrapment VIF of 5.23 again exceeded conservative cut-scores. We sued the same approach to investigate the role of multicollinearity of both types of entrapment: regression models dropping external entrapment and internal entrapment, respectively. The model with internal entrapment only yielded the same pattern of non-significant results and overall R^2, and an internal entrapment VIF < 5.0. The model with external entrapment only showed external entrapment remaining a significant predictor, the full model possessing a similar overall R^2, and all VIF values within acceptable ranges. Collectively, findings summarized in Table 4 held when multicollinearity was

Table 3
Entrapment correlation table with age, negative cognitions, mental health symptoms, and suicidal thoughts and behaviors.

	1	2	3	4	5	6	7	8	9	10	11	12
1. EE	–	**.81**	**−.16**	**.78**	**.68**	**.68**	**.72**	**.56**	**.60**	**.51**	**.11**	**.64**
2. IE	**.84**	–	**−.16**	**.82**	**.75**	**.73**	**.79**	**.60**	**.63**	**.46**	**.10**	**.74**
3. Age	**−.13**	**−.16**	–	**−.22**	**−.19**	**−.15**	**−.19**	**−.13**	−.06	**−.15**	−.04	**−.19**
4. Def	**.78**	**.84**	**−.14**	–	**.73**	**.74**	**.81**	**.61**	**.64**	**.50**	.06	**.70**
5. PB	**.66**	**.64**	**−.13**	**.55**	–	**.72**	**.67**	**.55**	**.49**	**.53**	**.15**	**.74**
6. TB	**.38**	**.37**	**−.21**	**.44**	**.42**	–	**.70**	**.51**	**.53**	**.53**	**.11**	**.63**
7. Dep	**.70**	**.71**	**−.16**	**.71**	**.62**	**.41**	–	**.69**	**.71**	**.41**	.05	**.66**
8. Anx	**.63**	**.61**	−.09	**.55**	**.64**	**.25**	**.78**	–	**.77**	**.40**	**.11**	**.48**
9. Str	**.64**	**.63**	−.05	**.50**	**.58**	**.30**	**.80**	**.83**	–	**.39**	**.14**	**.49**
10. Soc	**.40**	**.37**	.04	**.33**	**.33**	.07	**.39**	**.36**	**.45**	–	**.37**	**.41**
11. Self	**.30**	**.25**	**.13**	**.17**	**.21**	−.06	**.25**	**.29**	**.33**	**.68**	–	.07
12. STBs	**.46**	**.46**	**−.16**	**.47**	**.36**	**.26**	**.39**	**.30**	**.35**	**.17**	.07	–

Notes: Values above the diagonal = U.K. sample; Values below the diagonal = U.S. sample; EE = External entrapment; IE = Internal entrapment; Def = Defeat; PB = Perceived burdensomeness; TB = Thwarted belongingness; Dep = Depressive symptoms; Anx = Anxiety symptoms; Str = General distress; Soc = Social perfectionism; Self = Self-oriented perfectionism; STBs = Suicidal thoughts and behaviors lifetime total score; **Bold** font denotes $p < .05$.

evaluated. Overall, consistent with expectations, entrapment was associated with total STBs. However, observed effects were small, and varied in type of entrapment by country.

Table 5 contains logistic regression model statistics predicting suicide risk level (none vs. elevated) for the U.K. and U.S. samples, respectively. For the U.K. model, 49.7% (207/416) of participants fell in the elevated suicide risk group. The model displayed good fit (Hosmer & Lemeshow X^2 (8) = 5,43, $p = .71$. The collection of predictor variables accounted for a significant and large amount of variance in suicide risk group membership, $X^2(15) = 266.32$, $p < .001$, Cox & Snell $R^2 = 0.47$, Nagelkerke $R^2 = 0.63$. Both internal entrapment (OR = 3.27) and perceived burdensomeness (OR = 3.43) were associated with moderately sized increased odds of elevated suicide risk group membership. No other significant effects were observed in the model. In light of the internal entrapment VIF value, we again ran models successively dropping each type of entrapment. The model with internal entrapment only yielded significant and odds ratio, as well as overall model effect and fit, statistics in line with the initial model. The model containing external entrapment only also yielded results consistent with the initial model. Collectively, findings summarized in Table 5 held when multicollinearity was evaluated.

For the U.S. model, 40.2% (152/378) of participants fell in the elevated suicide risk group. The model displayed good fit (Hosmer & Lemeshow X^2 (8) = 5,34, $p = .72$. The collection of predictor variables

Table 4
Linear regression statistics predicting total suicidal thoughts and behaviors (United Kingdom and United States samples).

Predictor (United Kingdom sample)*	*B* (SE *B*)	*T* (df)	*p*-value	η_p^2	90% η_p^2 CI
Intercept	7.73 (1.03)	7.46 (1)	< .001	.12	–
External entrapment	−0.10 (0.24)	−0.41 (1)	.68	< .001	.00 to .009
Internal entrapment	**1.48 (0.28)**	**5.27 (1)**	**<.001**	**.06**	**.03 to .10**
Male gender[a]	−0.25 (0.87)	−0.29 (1)	.77	< .001	.00 to .01
Female gender[a]	−0.39 (0.84)	−0.47 (1)	.64	.001	.00 to .01
White race[b]	0.19 (0.63)	0.30 (1)	.77	< .001	.00 to .003
Asian race[b]	−2.05 (1.10)	−1.86 (1)	.06	.01	.00 to .03
Age	−0.11 (0.13)	−0.91 (1)	.36	.002	.00 to .01
Defeat	0.39 (0.27)	1.41 (1)	.16	.005	.00 to .02
Perceived burdensomeness	**1.61 (0.22)**	**7.34 (1)**	**< .001**	**.12**	**.07 to .16**
Thwarted belongingness	0.05 (0.21)	0.23 (1)	.82	< .001	.00 to .005
Depressive symptoms	0.34 (0.26)	1.29 (1)	.20	.004	.00 to .02
Anxiety symptoms	−0.17 (0.21)	−0.81 (1)	.42	.002	.00 to .01
General distress symptoms	0.04 (0.22)	0.18 (1)	.85	< .001	.00 to .003
Social perfectionism	−0.01 (0.17)	−0.08 (1)	.93	< .001	.00 to .001
Self-oriented perfectionism	−0.11 (0.14)	−0.77 (1)	.44	.001	.00 to .01
Predictor (United States Sample)**	***B* (SE *B*)**	***T* (df)**	***p*-value**	**η_p^2**	**90% η_p^2 CI**
Intercept	6.69 (0.31)	21.21 (1)	< .001	.55	–
External entrapment	**0.86 (0.34)**	**2.49 (1)**	**.01**	**.02**	**.002 to .04**
Internal entrapment	0.16 (0.39)	0.41 (1)	.68	< .001	.00 to .01
Male gender[c]	−0.42 (0.40)	−1.03 (1)	.30	.003	.00 to .02
White race[d]	−0.19 (0.37)	−0.51 (1)	.61	.001	.00 to .01
Age	−0.30 (0.18)	−1.71 (1)	.09	.01	.00 to .03
Defeat	0.55 (0.35)	1.58 (1)	.11	.007	.00 to .03
Perceived burdensomeness	0.20 (0.26)	0.76 (1)	.44	.002	.00 to .01
Thwarted belongingness	0.03 (0.20)	0.16 (1)	.87	< .001	.00 to .003
Depressive symptoms	0.15 (0.35)	0.42 (1)	.67	< .001	.00 to .01
Anxiety symptoms	−0.38 (0.35)	−1.08 (1)	.28	.003	.00 to .02
General distress symptoms	0.51 (0.35)	1.46 (1)	.14	.006	.00 to .02
Social perfectionism	−0.03 (0.24)	−0.12 (1)	.90	< .001	.00 to .002
Self-oriented perfectionism	−0.14 (0.24)	−0.57 (1)	.57	.001	.00 to .01

Notes: *F(15, 400) = 47.72, $p < .001$, Adj. $R^2 = .63$; ** F(13, 364) = 9.63, $p < .001$, Adj. $R^2 = .23$; SE = Standard error; df = Degrees of freedom; η_p^2 = Partial eta squared; CI = Confidence interval; [a] Transgender was coded as reference group for gender; [b] 'Other' minority race was coded as reference group for race; [c] Female was coded as reference group for gender; [d] 'Minority race was coded as reference group for race; **Bold** font denotes significant predictor.

Table 5
Logistic regression statistics predicting elevated suicide risk group membership (United Kingdom and United States models).

Predictor (United Kingdom sample)*	*B* (SE *B*)	Wald X^2 (df)	*p*-value	OR	OR 95% CI
Constant	−0.37 (1.19)	0.10 (1)	.75	0.69	–
External entrapment	−0.18 (0.27)	0.45 (1)	.50	0.83	0.49 to 1.42
Internal entrapment	**1.18 (0.31)**	**14.48 (1)**	**<.001**	**3.27**	**1.78 to 6.02**
Male gender[a]	0.94 (0.99)	0.89 (1)	.74	2.55	0.37 to 17.76
Female gender[a]	0.30 (0.96)	0.10 (1)	.75	1.35	0.21 to 8.81
White race[b]	0.44 (0.73)	0.37 (1)	.54	1.55	0.37 to 6.49
Asian race[b]	−1.98 (1.23)	2.59 (1)	.11	0.14	0.01 to 1.54
Age	−0.15 (0.16)	0.87 (1)	.35	0.86	0.63 to 1.17
Defeat	0.31 (0.29)	1.10 (1)	.29	1.36	0.76 to 2.43
Perceived burdensomeness	**1.23 (0.31)**	**15.64 (1)**	**< .001**	**3.43**	**1.86 to 6.32**
Thwarted belongingness	0.18 (0.24)	0.55 (1)	.46	1.20	0.74 to 1.94
Depressive symptoms	−0.18 (0.29)	0.36 (1)	.55	0.84	0.47 to 1.49
Anxiety symptoms	0.36 (0.23)	2.54 (1)	.11	1.44	0.92 to 2.25
General distress symptoms	0.14 (0.26)	0.31 (1)	.58	1.15	0.69 to 1.92
Social perfectionism	0.06 (0.20)	0.09 (1)	.76	1.06	0.72 to 1.58
Self-oriented perfectionism	−0.28 (0.17)	0.45 (1)	.10	0.76	0.54 to 1.06
Predictor (United States sample)**	***B*** **(SE *B*)**	**Wald X^2 (df)**	***p*-value**	**OR**	**OR 95% CI**
Constant	−0.41 (0.22)	3.59 (1)	.06	0.66	–
External entrapment^	0.46 (0.24)	3.57 (1)	.06	1.58	0.98 to 2.53
Internal entrapment	0.20 (0.27)	0.58 (1)	.45	1.23	0.72 to 2.07
Male gender[c]	−0.16 (0.28)	0.33 (1)	.56	0.85	0.49 to 1.47
White race[d]	−0.06 (0.26)	0.05 (1)	.81	0.94	0.57 to 1.56
Age	−0.19 (0.12)	2.36 (1)	.12	0.83	0.65 to 1.05
Defeat	0.31 (0.24)	1.59 (1)	.21	1.36	0.84 to 2.20
Perceived burdensomeness	−0.14 (0.18)	0.57 (1)	.45	0.87	0.61 to 1.25
Thwarted belongingness	0.18 (0.16)	1.28 (1)	.26	1.19	0.88 to 1.62
Depressive symptoms	0.30 (0.24)	1.56 (1)	.21	1.35	0.82 to 2.17
Anxiety symptoms	−0.37 (0.25)	2.20 (1)	.14	0.69	0.42 to 1.13
General distress symptoms	0.38 (0.25)	2.39 (1)	.12	1.46	0.90 to 2.37
Social perfectionism	0.01 (0.18)	0.01 (1)	.95	1.01	0.71 to 1.43
Self-oriented perfectionism	−0.09 (0.18)	0.25 (1)	.61	0.91	0.65 to 1.29

Notes: *$X^2(15) = 266.32$, $p < .001$, Cox & Snell $R^2 = .47$, Nagelkerke $R^2 = .63$; **$X^2(13) = 92.33$, $p < .001$, Cox & Snell $R^2 = .22$, Nagelkerke $R^2 = .29$; SE = Standard error; df = Degrees of freedom; OR = Odds ratio; CI = Confidence interval; [a]Transgender was coded as reference group for gender; [b] 'Other' minority race was coded as reference group for race; [c] Female was coded as reference group for gender; [d] 'Minority race was coded as reference group for race; **Bold** font denotes significant predictor; ^denotes significant predictor in subsequent model dropping internal entrapment due to multicollinearity concerns (see online supplement Table 1 for full model statistics).

accounted for a significant and small amount of variance in suicide risk group membership, $X^2(13) = 92.33$, $p < .001$, Cox & Snell $R^2 = 0.22$, Nagelkerke $R^2 = 0.29$. However, no significant effects were observed in the model. Because the internal entrapment exceeded 5.0, we repeated the linear regression model process to inspect multicollinearity impacts. The model including only internal entrapment yielded the same non-significant pattern and overall model statistics. On the contrary, the model including only external entrapment yielded significant pattern as follows: External entrapment (OR = 1.70, 95% CI = 1.10–2.62, $p = .02$) was associated with significant yet small sized increased odds of elevated suicide risk group membership. Table 1 in the online supplement contains full model statistics for the revised U.S. sample logistic regression model.

4. Discussion

The construct of entrapment has received substantial empirical study as a theoretically salient correlate of SI and important consideration when assessing acute suicide risk (e.g., Galynker et al., 2017; O'Connor and Kirtley, 2018). Recent work, however, has encouraged the investigation of the cultural relevance of the construct to further determine its importance in broad suicide prevention efforts (O'Connor and Portzky, 2018). Such cross-national study of entrapment seems especially important given mixed factor structure evidence to date (Gilbert and Allan, 1998; Forkmann et al., 2018; Tucker et al., 2016) and lack of measurement invariance testing (O'Connor and Portzky, 2018). The current study sought to begin this line of work by testing the factor structure and validity of the E-Scale in two samples of young adults derived from different countries (the U.S. and U.K.).

Confirmatory factor analyses indicated clear support for the two-factor solution of correlated but distinct external and internal entrapment subscales of the E-Scale in both the U.S. and U.K. samples. Two-factor model support is consistent with prior studies in German (Forkmann et al., 2018) and U.K. (Gilbert and Allan, 1998) samples. This result is important as a higher risk sample of U.S. young adults supported a one factor solution and thus tested theoretical models with entrapment as a unified construct potentially limiting important theoretical inferences (Tucker et al., 2016). The present study also demonstrated E-Scale, and specifically entrapment subscale, factor loading variation for the first time. This finding implies potential cultural differences in the way entrapment may be measured or experienced.

The current study provides further rationale for future research regarding vulnerability for SI to consider both external and internal entrapment. Understanding entrapment as a dimensional construct can help inform future work that seeks to refine psychological models of suicide and related assessment and treatment procedures (O'Connor and Kirtley, 2018). External entrapment may specifically need to be reconsidered in the manner in which it is conceptualized and assessed by cultural context. Additionally, this work may have relevance for future research regarding SCS and its conceptualization of entrapment as the primary characteristic of the diagnostic entity. As research continues to understand the nature and clinical relevance of this entity, investigations may benefit from testing the factor structure, cultural variation, and correlates of the suicide crisis inventory (SCI; Galynker et al., 2017) when considering both components of entrapment.

The present study added considerably to the E-scale validity knowledge-base. Observed demographic disparities demonstrated that younger age was modestly associated with elevated internal and external entrapment. Females also reported higher internal entrapment compared to male counterparts (U.K. sample only). These patterns are newly identified, but not surprising in light of prior literature suggesting younger age and female gender (e.g., attempts) can be associated with STB risk (e.g., Borges et al., 2010). Also adding a novel entrapment examination, U.S. sample levels were higher compared to U.K. counterparts. Importantly, all demographic effects were small. At most, demographic variation in entrapment identifies an avenue for further empirical investigation.

Correlation patterns for internal and external entrapment largely replicate, and to some extent extend, prior empirical studies linking elevated entrapment with increased stress, mental health symptoms, and STBs (e.g., De Beurs et al., 2019; O'Connor and Portzsky, 2018; Siddaway et al., 2015; Taylor et al., 2011; Willner and Goldstein, 2001). These associations are also supported by the IMV (O'Connor, 2011; O'Connor and Kirtley, 2018), and yet also suggest potential need for theory refinement to account for multiple forms of entrapment. Magnitudes of positive entrapment-based convergent associations in the present study were largely consistent across samples and types of entrapment. A noteworthy exception to this pattern is that both internal and external entrapment displayed stronger associations with total STBs in the U.K. sample. Regression model results further accentuate entrapment differences across samples. Consistent with one recent study among Scottish young adults (De Beurs et al., 2019), internal entrapment (and perceived burdensomeness) displayed robust predictive validity associations with total STBs and elevated suicide risk level in the U.K. sample. While external entrapment did predict STBs in the U.S. sample, the associations were small. In total, internal entrapment appears to be a critical factor in understanding STBs among U.K. young adults. The prominence of internal entrapment may support Baumeister's (1990) notion of suicide as an escape from painful self-awareness. This perspective holds that heightened awareness of one's failures and associated negative emotions trigger efforts to escape negative self-focus. Such escape induces irrational, impulsive processes whereby suicide becomes an extreme yet viable option.

An additional point of relevance includes the relationship between entrapment and the interpersonal predictors of suicide outlined in the interpersonal theory of suicide (Van Orden et al., 2010). Basic associations between entrapment (internal and external) and both thwarted belongingness and perceived burdensomeness support a strong, but not redundant association which corresponds to the extant literature (de Beurs, et al., 2019). Maybe the strongest addition of the current investigation in this line of study is the co-occurring prediction of STBs by both perceived burdensomeness and internal entrapment in young adults in the U.K. even when a host of other predictors, including external entrapment and perceived burdensomeness were considered. This may lend additional support that these two constructs of IMV and ITS are particularly important when considering model refinement. For example, IMV posits that both thwarted belongingness and perceived burdensomeness act as moderators of the entrapment to suicidal desire relationship. Results may suggest that transition to suicidal desire from feelings of entrapment, as hypothesized by IMV, may best be encapsulated by co-occurring feelings of internal entrapment and perceived burdensomeness, and this relationship may function differently across nations.

Taken in their entirety, results regarding the factor structure and correlates of the E-scale have clear implications for future research. Evidence regarding the factor structure of the E-scale is still mixed. Findings from the present study support retention of the two-factor model across English-speaking young adults in the U.K. and U.S and thus provide rationale for continued confirmatory tests of one versus two factor models in any study using the E-scale. Entrapment subscale variation, however, raises a next needed step in the psychometric assessment of the E-Scale: further measurement invariance examination by additional cross-national contexts. The psychometric support for the E-scale is still burgeoning, unable to draw a firm conclusion on the factor structure of the E-scale in clinical or non-clinical samples. This fact limits the ability to rigorously test important theoretical models for suicide such as the IMV (O'Connor and Kirtley, 2018).

As study results supported some variance in strength of relationships between entrapment and STBs in the two samples, larger cross-national sampling that investigates how entrapment may vary in its factor structure and impact on suicide are needed. Although this study does provide some evidence for the cross-cultural relevance of entrapment, further research in this area is certainly still necessary (O'Connor and Portzky, 2018). Translation and back translation of the E-scale is also needed (Forkman et al., 2018) which could lead to further cross-cultural assessment of the construct, as well as testing of associated theories of suicide (e.g., IMV). To further establish cross-cultural relevance, future work in this area should include qualitative research methodologies across countries of those with lived experience with STBs to understand the unique narratives or experiences of entrapment. Such research may provide valuable lessons on how a sense of internal or external entrapment manifests, offering potential insight into how or why entrapment measurement varies by sample. Such narrative inquiry can also explicate why entrapment may or may not lead to SI and worse outcomes. These narratives are critical for both theory and intervention development.

Future research should also seek to understand the interrelations not only between external and internal entrapment, but their associations with other cognitive and affective predictors of SI. Research suggests associations between elements of entrapment and hopelessness to range from r 0.28 to 0.77, depending on study sample (Lester, 2012; Panagioti et al., 2012). This may suggest that entrapment and hopelessness are distinct constructs, but further research is needed to definitively understand their conceptual and statistical associations. Entrapment's relationship to other factors, such as those measured by the suicide cognitions scale – feelings of unbearable pain, unlovability, and unsolvability of problems (Ellis and Rufino, 2015) – have yet to be studied. It may be that entrapment is encapsulated by these core beliefs associated with suicide. Additionally, some work has suggested these three core beliefs are best represented as one negative thinking factor (Bryan and Harris, 2019) that also may encapsulate internal and external entrapment.

Along with implications for future research, the current results provide some insights for suicide prevention strategies. First, an accumulation of evidence has been built to support experiences of entrapment of an important transdiagnostic factor that public health approaches to suicide prevention can target (Siddaway et al., 2015). This work may benefit from lessons learned about the focus on loneliness in broad approaches. The U.K. recently appointed a Minister of Loneliness (Pimlott, 2018) and U.S. public health organizational approaches such as the Center of Disease Control and Prevention (2011) call for building connectedness across multiple levels. Future research regarding internal and external entrapment can provide needed insights whether and how these broad initiatives can best decrease population level suicide risk through modifying vulnerability for experiences of entrapment.

More molecularly, study results have implications for therapeutic assessment and management of suicide risk in young adults from English speaking countries. The concept of entrapment, especially when conceptualized as external versus internal entrapment, provides a strong avenue to ideographically assess and manage modifiable thoughts, feelings, and behaviors associated with suicide risk. This ideographic understanding of entrapment could easily be incorporated in evidence-based suicide specific interventions, such as Brief-Cognitive Behavioral Therapy (Rudd et al., 2015). and the Collaborative Assessment and Management of Suicidality (CAMS; Jobes, 2016). The CAMS framework may provide the clearest example of this as it has shown

promise in reducing STBs in adults from multiple countries and includes the ideographic assessment of theoretically derived correlates of suicide other than perceptions of entrapment (Comtois et al., 2011; Jobes et al., 2016). The CAMS Suicide Status Form (SSF) may be a tool to in which internal entrapment can be incorporated. For instance, CAMS assessment and tracking may be refined to include entrapment among the set of theoretically-derived suicide correlates. Additionally, where a CAMS patient may express a sense of internal entrapment, the SSF provides places to explain and target entrapment through subjective quantitative ratings open-ended prompts, as well as identification of reasons for dying and treatment problems/goals. Additionally, the delineation between external and internal entrapment may help a patient understand their own suicidality better and one may serve as a driver of their suicidality (Tucker et al., 2015). If this is the case, therapeutic strategies from multiple evidence-based interventions could be incorporated into CAMS to target the entrapment-related driver, including thought diffusion/mindfulness strategies from ACT (Ducasse et al., 2014), thought challenging from CBT (Rudd et al., 2015), and potentially the budding Volitional Helpsheet (O'Connor et al., 2017).

When the current study's implications for research and clinical practice are contemplated, limitations of the study's methodology and study sample should be considered. Direct comparison of the U.K. versus U.S. samples is confounded by the differing sample recruitment methods. Further cross-cultural comparison should correct for this limitation in order to reduce alternative explanations of such comparisons. The use of snowball sampling limits generalizability of study results and resulted in relatively homogeneous subsamples of U.S. and U.K. young adults. This is not ideal given the study's focus on cross-cultural relevance and demographic correlates of entrapment. Future research would benefit from continued attention to the nature of entrapment in samples recruited from treatment settings, particularly utilizing longitudinal designs to investigate temporal relationships, the dynamic or static nature of the construct, and the test re-test reliability of the E-scale. This work would help rectify sample severity concerns seen in the current study as well (i.e., limited rates of historical STBs endorsed by each subsample). This is an important consideration as meta-analyses of correlated suicide risk factors demonstrate smaller correlation coefficients between factors in high risk versus low risk samples (Chu et al., 2017). The two factor solution clearly demonstrated in the current study could be an artifact of the low risk sample. More comprehensive measurement of STBs (e.g., Self-Injurious Thoughts and Behaviors Interview; Nock et al., 2007) would be an important addition to future replication efforts in high risk samples as well. Finally, all future investigations utilizing the two factor E-Scale structure should account for potential multicollinearity.

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Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Declaration of Competing Interest

None.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.psychres.2019.112550.

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