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# Stability amidst turmoil: Grit buffers the effects of negative life events on suicidal ideation



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## ABSTRACT

The goal of the current study is to examine the role of grit as a resilience factor that reduces the risk for suicidal ideation conferred by negative life events. Participants ( $N=209$ ) completed measures of negative life events and grit at baseline and a measure of suicidal ideation at follow-up four weeks later. Poisson regression analyses found that higher levels of grit buffered the relationship between negative life events and suicidal ideation such that negative life events only predicted suicidal ideation if grit was low. These results suggest that high grit can abate the increased suicidal ideation associated with negative life events. Aside from absolute levels of suicidal ideation, being able to predict or buffer dramatic shifts in suicidal ideation can be a useful diagnostic tool during interventions.

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## 1. Introduction

Every year over 39,000 people die of suicide in the United States, accounting for 1.4% of all deaths (CDC, 2014). In addition to the high rate of completed suicides, considerably more people contemplate suicide at some point (9.2% of the general population; Nock et al., 2008). This is concerning as suicidal ideation predicts future suicidal behavior (e.g., Baca-Garcia et al., 2011). With these statistics, it is difficult to debate the need to examine factors that confer risk for suicidal ideation as well as factors that can offset this risk. Negative life events are one of the most strongly supported risk factors for suicidal ideation, attempts, and completions (for a review, see Liu and Miller, 2014). The goal of this study is to examine grit, a psychological strength involving perseverance through adversity to reach long-term goals (Duckworth et al., 2007) as a potential resilience factor to the risk for suicidal ideation conferred by negative life events.

Negative life events are related to increased frequency (Sandin et al., 1998), intensity and duration (Fergusson et al., 2000; Joiner and Rudd, 2000) of suicidal ideation. Negative life events are more likely to serve as triggers for suicidal ideation when interacting with underlying person-level risk factors (Mann et al., 1999). For instance, negative patterns of thinking and maladaptive information processing in response to negative life events relate to a

greater likelihood of depressive symptoms, including suicidal ideation (e.g., Hankin and Abramson, 2002; Riso and Newman, 2003). Similarly, the interaction between loneliness and negative life events is a better predictor of suicidal ideation compared to either loneliness or negative life events alone (Chang et al., 2010). Thus, aspects of an individual can *strengthen* the effects of negative life events on suicidal ideation, but several aspects can also *weaken* these effects.

Although evidence suggests a clear link between negative life events and suicidal ideation, negative life events do not automatically lead to suicidal ideation - implicating the presence of resilience factors (i.e., moderators). At least some of these moderators are specific, person-level (i.e., trait) resilience factors (Chang and Nock, 2009; Hirsch et al., 2009) such as positive cognitive styles (Hirsch, et al., 2007; Kleiman et al., 2012), self-determination (Bureau et al., 2012), and hope (Davidson et al., 2009). These trait resilience factors are especially useful for preventing suicidal ideation and for reducing the impact of negative life events by altering a person's cognitions regarding what these events mean. Furthermore, measuring individuals on these factors can give insight into who may be more or less at risk to suicidal ideation after negative life events. Given that not everyone possesses the skills to flexibly adapt their cognitions to minimize the impact of negative life events, exploring other avenues by which a person's individual differences can buffer the effects of negative life event on suicidal ideation would be fruitful.

Grit involves passionate perseverance toward long term goals, especially through obstacles and adversity (Duckworth et al.,

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2007). That is, a gritty individual shows consistent interest in a goal (passion) and works toward this goal consistently (perseverance). While other stability-related factors (such as conscientiousness and self-control) have been studied as buffers to suicide (Lapierre et al., 2007), the construct of grit represents a unique facet of personality that may be especially adept at buffering against negative life events. Although similar, conscientiousness and self-control both represent shorter-term goal orientations than grit (Duckworth and Gross, 2014). Negative life events, in turn, may be on a small scale, or a large enough scale such that only extremely long-term passion and perseverance (i.e., grit) would serve as an adequate buffer. Thus, gritty individuals are defined by their ability to push through hardships, such as negative life events, whereas individuals high in conscientiousness or self-control need not explicitly be resilient to setbacks.

Little work, however, has been conducted on if and why gritty individuals are buffered against risk factors for suicidal ideation. One study suggests that certain gritty individuals (those higher in feelings of gratitude) are more adept at creating meaning in life, which serves as a mechanism to reduce suicidal ideation (Kleiman et al., 2013). While grit is internal and future-focused, gratitude is more external and past/present focused. Therefore, the combination of a gritty and gracious individual provides many complimentary cognitive strategies as buffers. This provides initial evidence that grit lowers an individual's suicidal ideation - on average. However, it is unclear how negative life events might impact this relationship. We believe that grit will buffer against negative life events because gritty individuals are able to focus beyond these immediate events to their long-term goals. This future-focused orientation is generally considered a more optimistic and hopeful orientation, as opposed to any present-fatalistic orientation (Zimbardo and Boyd, 1999). Thus, in times of crisis brought on by negative life events, we would expect the positive and future-focused cognitive-attribitional style of gritty individuals to confer the same benefits that the negative and present-focused cognitive-attribitional style of hopeless individuals negates (Beck et al., 1975). This research and theory leads to our primary hypothesis: negative life events will only positively predict suicidal ideation when grit is low.

In the present study we examined if grit buffered the relationship between negative life events and suicidal ideation. We hypothesized that grit will moderate the relationship between negative life events and later suicidal ideation. Specifically, individuals with more grit will show a weaker positive (or nonexistent) relationship between negative life events and later suicidal ideation than individuals with less grit.

## 2. Method

### 2.1. Participants

Participants were 209 undergraduates at a large mid-Atlantic university (84.2% female). The mean age was 20.51 years (S.D.=4.12, range 17–50). The sample was approximately 54% Caucasian, 20% Asian, 13% African American, and the remaining 13% responded as “Other”.

### 2.2. Procedure

Participants completed online self-report measures twice, separated by approximately four weeks, as part of a larger IRB-approved study of self-injury. The second time point was completed an average of 26.28 days (S.D.=3.45 days) after completion of the first time point. Stringent suicide risk procedures were used to protect participants.

### 2.3. Measures

#### 2.3.1. Grit

The grit scale (Duckworth et al., 2007) is a 12-item self-report measure of the pursuit of long-term goals with perseverance and passion. Reliability and construct validity has been shown in previous studies (Duckworth et al., 2007). In the present study, the grit scale had acceptable internal consistency ( $\alpha=0.79$ ).

#### 2.3.2. Negative events

The College Life Stress Inventory (CLSI; Kohn et al., 1990) is a self-report measure that assesses the occurrence of positive and negative life events that are relevant to college students. In the present study, we used the 30 negative life events only. Examples of these events include “failed a test” and “broke up with boyfriend/girlfriend”.

#### 2.3.3. Suicidal ideation

The Beck Suicide Scale (BSS; Beck and Steer, 1991) is a 21-item measure of current suicidal ideation. The first 19 items assess current suicidal ideation and the last two items assess previous suicidal behaviors. Thus, we only used the first 19 items, as we were only interested in suicidal ideation. In the present study, the BSS had acceptable internal consistency at time 1 ( $\alpha=0.85$ ) and time 2 ( $\alpha=0.89$ ).

### 2.4. Analytic strategy

In the present study, time 2 suicidal ideation scores were *semi-continuous*, meaning that a large percentage (92%) of the sample endorsed a zero score and the non-zero scores were normally distributed (Kolmogorov–Smirnov  $Z=0.73$ ,  $p<0.655$ ). In these cases, using ordinary least squares regression is not appropriate. An appropriate analysis takes this distribution into consideration. Poisson regression allows for variables of this nature, and thus, we used Poisson regression to conduct our analysis. This analytic technique has been used in previous studies of suicidal ideation (e.g., Davison and Kaplan, 2014). To test our main hypothesis, we followed the standard guidelines for assessing moderation (Aiken and West, 1991) by standardizing the main effects (i.e., grit and negative life events) before calculating the interaction term.

## 3. Results

Table 1 shows the means, standard deviations, and intercorrelations of the study variables. As would be expected, time 1 grit was negatively correlated with suicidal ideation at both time points. Suicidal ideation at time 1 and time 2 were positively correlated. Interestingly, negative life events were unassociated with any of the study variables. This is not necessarily problematic because, as reported earlier, suicidal ideation scores were highly skewed. Thus a lack of a significant correlation between negative life events and time 2 suicidal ideation is not an indication of there being no direct relationship between the two variables. Indeed,

**Table 1**  
Means, standard deviations, and intercorrelations of study variables.

	1	2	3	4
1. Time 1 suicidal ideation (BSS)	–			
2. Time 1 negative life events (CLSI)	0.04	–		
3. Time 1 grit	–0.37***	0.04	–	
4. Time 2 suicidal ideation (BSS)	0.76***	0.06	–0.28***	–
Mean	1.12	7.02	7.19	0.59
Standard deviation	3.19	3.50	1.33	2.21

when examining the relationship between negative life events and time 2 suicidal ideation using Poisson regression, there was evidence of a direct effect found ( $b=0.19$ ,  $p=0.022$ ).

Table 2 shows the results of the Poisson regression predicting time 2 suicidal ideation. As can be seen in the table, there were main effects of time 1 suicidal ideation and negative life events, as well as an interaction between negative life events and grit. We further explored the significant interaction by plotting and probing it. Fig. 1 shows the plot of the interaction. Among those with low levels of grit, the relationship between negative life events and suicidal ideation was strengthened ( $\chi^2(1)=11.11$ ,  $p<0.001$ ). Among those with high levels of grit, the relationship between negative life events and suicidal ideation was weakened to non-significance ( $\chi^2(1)=0.02$ ,  $p=0.890$ , 95% CI:  $-0.95$  to  $0.90$ ). This pattern of results supports our hypothesis that grit buffers the relationship between negative life events and suicidal ideation.

#### 4. Discussion

The primary finding from this study was that individuals high in grit showed no significant relationship between negative life events and later suicidal ideation, whereas individuals low in grit showed a significant and positive relationship between negative life events and later suicidal ideation. While a vast literature has already explored many positively-valenced and prosocial resilience factors buffering against increased suicidal ideation (see Johnson et al., 2011 for a review), this work is one of only a few to explore the novel pathway of stability traits as a resilience factor. We discuss the results below in light of their immediate and practical implications, followed by their implications for theory on suicidal behavior more broadly.

Gritty individuals' suicidal thoughts may be less affected by negative life events for several reasons. One reason might be that negative events have less of an impact on gritty individuals than non-gritty individuals. Gritty individuals might minimize the attention they devote to stress by focusing on more long-term goals. Grit keeps a person's spotlight of attention broad enough to include long-term goals, even in the midst of attending to current negative life events. Moreover, gritty individuals might also reframe the negative events more positively or engage in more

effective problem-solving during these times of heightened stress. All of these potential mechanisms are areas worthy of exploration in future studies.

Grit may confer resilience through both intra- and interpersonal pathways. First, by keeping long-term goals salient, grit may motivate individuals to address obstacles that impede long-term goal progress. Thus, in the wake of a negative life event, gritty individuals may be particularly motivated to seek out those things that mitigate the impact of negative life events, such as social support (Kleiman et al., 2014). In doing so, gritty individuals may avoid extended social isolation, ultimately decreasing the likelihood that they will experience suicidal ideation. This future orientation and utilization of resources has already been shown in other life domains, as gritty individuals exhibit long term academic persistence in the face of adversity (e.g., Duckworth et al., 2007; Duckworth and Seligman, 2005). By contrast, non-gritty individuals may lose sight of any important long-term goals in favor of more short-term ones, such as escaping seemingly unbearable consequences of some negative life event. Thus, while this future-oriented focus may not necessarily make a gritty individual happier (as shown by Zimbardo and Boyd (1999)) or less prone to suicidal ideation, it may serve to at least minimize the impact of one's present state by broadening the lens through which negative life events are viewed.

The salience of long-term goals may also serve to motivate a gritty individual to develop a social support system or other beneficial resources prior to experiencing a negative life event. These resources may then be utilized once a negative life event occurs. The potential beneficial influence of grit is corroborated by research demonstrating that gritty individuals tend to persist through more effortful and less enjoyable preparatory activities than their less gritty counterparts, and that this persistence may explain the increased success rates of gritty individuals (e.g., Duckworth et al., 2011).

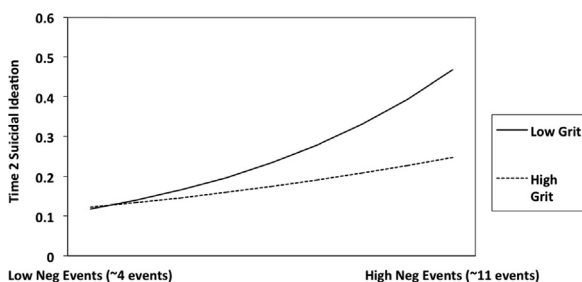
The strong positive correlation between grit and conscientiousness ( $r=0.77$ ; Duckworth and Quinn, 2009) may offer further support for these notions. Conscientious individuals tend to elicit less criticism from their peers due to their well-controlled and responsible behavior, and research links greater conscientiousness to increased relationship quality (Roberts et al., 2009). Furthermore, this conscientiousness may increase the chances that gritty individuals' efforts to utilize social support will be appropriate and effective. Several researchers identified a positive relationship between conscientiousness and interpersonal relationship skills (e.g., Dudley et al., 2006; Roberts et al. 2009). Not only will these interpersonal relationship skills and consequent effective social behavior result in increased social support overall, but it may also decrease the chances that gritty individuals perceive themselves as burdensome to others, as their effective attainment of social support comes at comparatively minimal cost to the provider of the social support.

The study has several limitations that should be addressed in future research. First, our undergraduate sample limits generalizability to other samples and warrants replication, particularly in community samples with and without life difficulties and emotional disturbances. Second, since actual suicidal behaviors are rare in college populations, we used thoughts of suicide rather than behavioral outcomes. Although thoughts and behaviors are strongly related, they are conceptually and clinically distinct. Our findings suggest that grit may protect against thoughts of suicide, but whether grit explicitly protects against suicidal behaviors remains an empirical question. Third, we used only self-report measures of suicidal ideation, which may not be as reliable as interview methodologies - especially given considerations such as social desirability. Finally, the one month follow-up time period is relatively short and future studies with longer follow-up periods

**Table 2**  
Results of Poisson regression analyses predicting time 2 suicidal ideation.

Variable	B	SE B	$\chi^2$	P
Time 1 suicidal ideation (BSS)	0.26	0.02	208.18	< 0.001
Time 1 negative life events (CLSI)	0.56	0.13	18.25	< 0.001
Time 1 grit	-0.15	0.12	1.57	0.210
Negative life events $\times$ grit interaction	-0.18	0.09	4.07	0.044

Note. BSS=Beck Suicide Scale, CLSI=College Life Stress Inventory, Grit is measured by the Grit Scale. Model  $\chi^2=955.84$ , d.f.=205.



**Fig. 1.** Interaction between grit and negative life events on time 2 suicidal ideation. Note. Time 1 suicidal ideation was included as a covariate.

are needed. Moreover, while this one month follow-up allows for a snapshot of how grit impacts the relationship between negative life events and suicidal ideation, it also raises the question of whether consistent negative life events may erode grit's buffering influence, or even whether a lack of negative or the presence of positive life events may ignite, replenish, or further reinforce grit's buffering influence.

This study is among only a small number to implicate the individual difference factor of grit as conferring resilience against suicidal ideation. Future studies should seek deeper exploration of the potential mechanisms by which grit may confer resilience, such as more future-oriented or global thought processes and improved problem-solving. Furthermore, experimental studies can make inroads in interventions to instill psychological states similar to grit, allowing individuals low in grit to temporarily experience resilience to suicidal ideation in times of particularly high stress. This research reaffirms the direction of current efforts to inform suicide research with interactive person-environment phenomena, rather than individual differences or environmental factors in isolation.

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