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Grateful individuals are not suicidal: Buffering risks associated with hopelessness and depressive symptoms

Evan M. Kleiman *, Leah M. Adams, Todd B. Kashdan [1], John H. Riskind

Department of Psychology, George Mason University, Mail Stop 3F5, Fairfax, VA 22030, United States

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ABSTRACT

With suicidal behavior serving as a leading cause of injury and death around the world, researchers must expand ongoing efforts to uncover protective factors. In this study, we examined if gratitude mitigated existing risk factors for suicide. Specifically, we predicted that gratitude moderates the relationship between suicidal ideation and (a) hopelessness and (b) depressive symptoms in a sample of 369 diverse undergraduate students. Results indicate that for people who are highly grateful, both hopelessness and depressive symptoms are less likely to be associated with thoughts and intentions to kill oneself. The findings demonstrate the value of integrating protective factors against suicidality, including character strengths such as gratitude, into existing theories that tend to be limited to vulnerability factors. We offer tentative ideas for enhancing the impact of suicide prevention and intervention programs by directly addressing gratitude, which has been shown to be highly modifiable.

1. Introduction

Western psychology has long-focused on the alleviation of harmful symptoms and avoidance of negative experiences, often giving little attention to the cultivation of positive experiences and psychological strengths. Over the past decade with the advent of positive psychology, this imbalance has shifted (Seligman & Csikszentmihalyi, 2000). Research consistently finds that "positive" and "negative" emotions, behaviors, and personality traits are unique and inversely related (Carver, Sutton, & Scheier, 2000; Keyes, 2007). Thus, researchers continue to expound on the value of comprehensive models of human functioning where enhancing psychological strengths might mitigate the consequences of negative life events and existing risk factors for emotional disturbances (Joseph & Wood, 2010). This idea is especially important when considering suicide—the third leading cause of death among individuals aged 15–24 in the United States, following accidental injury and homicide (Centers for Disease Control and Prevention, 2013). Although less than 1 in 10,000 people in the United States actually die by suicide in a given year, approximately 15% of Americans will have serious thoughts of killing themselves at some point in their lives (suicidal ideation) (Nock et al., 2008). The next generation of research must focus on resiliency factors that can offset risk factors that precede suicidal thoughts and behaviors. One such resiliency factor and psychological strength is gratitude. In the present study, we examined whether gratitude alters associations between suicidal ideation and two risk factors for suicidal thoughts and behavior: (1) hopelessness and (2) depressive symptoms.

Gratitude is a tendency towards "noticing and appreciating the positive in life" (see Wood, Froh, & Geraghty, 2010 for a review). Researchers have found that gratitude predicts a variety of outcomes that are negatively associated with suicide ideation. For example, grateful individuals have stronger social connections (Algoe & Haidt, 2009), a greater sense of belonging (Kashdan, Mishra, Breen, & Froh, 2009), and use more adaptive coping techniques to manage stressors (Wood, Joseph, & Linley, 2007). All of these healthy correlates of gratitude also happen to be inversely associated with suicide (for a review, see Johnson, Wood, Gooding, Taylor, & Tarrier, 2011). Furthermore, gratitude is not only correlated with indicators of well-being; researchers have shown that experiences of gratitude lead to greater well-being (Wood, Maltby, Stewart, Linley, & Joseph, 2008). Taken together, the broad psychological and social benefits of gratitude, along with evidence that gratitude is modifiable through simple interventions, suggest that gratitude is a promising new factor to explore in models of risk and resilience to suicidal thoughts and behavior.

A grateful disposition in which individuals explicitly focus on and appreciate the positive in life can be contrasted against a depressive disposition, which includes a focus on negative aspects of the self, others, and the future (Beck, 1963). Recent work reveals the nature of the relationship between gratitude and depression. In a series of longitudinal studies, Wood, Maltby, Gillett, Linley, and

* Corresponding author. Tel.: +1 2153596148; fax: +1 (703) 993 9486.
E-mail address: ekleiman@gmu.edu (E.M. Kleiman).

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Joseph (2008) found that higher levels of gratitude led to lower levels of depression. Extending this line of research, Lambert, Clark, Durtschi, Fincham, and Graham (2010) found that gratitude led to greater use of positive reframing, which in turn led to fewer depressive symptoms. This body of work suggests that gratitude is a relevant, robust predictor of greater mental health.

Although there is considerable work on the role of gratitude in well-being and depression, there has been little on the link between gratitude and suicide. We are aware of only one published study that examined the relationship between gratitude and suicidal ideation. Li, Zhang, Li, Li, and Ye (2012) found that in Chinese adolescents, the indirect effect of gratitude on suicidal ideation through self-esteem was stronger for individuals with fewer stressful life events (mediated moderation model). This single study offers initial promise. To extend this work, instead of conducting isolated tests of resiliency factors such as gratitude, there is value in examining synergistic models with risk factors for suicide such as depressive symptoms and hopelessness. Thus, in the present study, we examine gratitude as a moderator of the relationships between hopelessness and depressive symptoms with suicidal ideation. Hopelessness represents a robust, well-documented risk factor for suicide (Beck, Brown, & Steer, 1989; Brown, Beck, Steer, & Grisham, 2000). Completed and attempted suicides are rare in the absence of psychiatric illness, particularly depressive disorders (Beck, Steer, Beck, & Newman, 1993). The inclusion of gratitude in investigations of these two important risk factors for suicide might clarify points of intervention to reduce suicide risk.

1.1. The present study

The present investigation contributes to the literature in two major ways. First, to our knowledge, this is only the second study to explore the relationship between gratitude and suicidal ideation (and the first to do so in adults). Second, we integrate highly relevant risk factors for suicidal ideation, and ultimately suicide attempts with potential resiliency factors. Through consilience between separate disciplines, we hope to expedite the rate of innovation in the study, prevention, and treatment of suicide. Based on prior theory and empirical work, we hypothesized that gratitude would moderate the relationships between both risk factors (hopelessness and depressive symptoms) in predicting suicidal ideation. That is, for individuals high in gratitude, there would be a weaker relationship between suicide risk factors and suicidal ideation relative to individuals low in gratitude.

2. Method

2.1. Participants

A total of 369 undergraduates (85.1% female; mean age = 22.02, SD = 5.78, range 18–60) were recruited for an IRB-approved online study. Approximately 55% of the sample self-identified as Caucasian, 17% Asian, 11% African American, and 17% other/multi-racial.

2.2. Procedure

Participants completed online measures of hopelessness, depressive symptoms, gratitude, and suicidal ideation as part of a larger study. We used stringent suicide procedures under the supervision of a licensed clinical psychologist (JHR), and an Institutional Review Board approved this study.

2.3. Measures

2.3.1. Hopelessness

The Beck Hopelessness Scale (BHS; Beck, Weissman, Lester, & Trexler, 1974) is a 20-item true/false self-report measure that assesses negative expectations for the future. Eleven items are keyed for true to indicate a hopeless response and nine are keyed for false to indicate a hopeless response. Hopeless responses are summed to obtain an overall hopelessness score (range 0–20) where higher scores equal higher levels of hopelessness.

2.3.2. Gratitude

The Gratitude Questionnaire (GQ-6; McCullough, Emmons, & Tsang, 2002) is a six-item self-report measure that assesses the tendency to experience gratitude in daily life. Scores are summed, including two reverse scored items, to obtain an overall gratitude score where higher scores indicate higher daily gratitude. Previous studies have found strong reliability and validity for this measure (e.g., Kashdan et al., 2009; McCullough, Tsang, & Emmons, 2004).

2.3.3. Depressive symptoms

The Beck Depression Inventory, 2nd edition (BDI-II; Beck, Steer, & Brown, 1996) is a 21-item measure of current depressive symptoms. The BDI item assessing suicide (item #9) was removed to avoid contamination with the dependent variable. Meta-analytic studies of previous version of this measure find strong internal consistency and convergent validity (Beck, Steer, & Carbin, 1988) and more recent studies confirm the psychometrics for the current version of the measure (Dozois, Ahnberg, & Dobson, 1998).

2.3.4. Suicidal ideation

The Beck Suicide Scale (BSS; Beck & Steer, 1991) is a 21-item self-report measure that assesses current suicide intent. The first 19 items are designed to measure suicide ideation and the last two designed to measure past attempts. Similar to prior studies (e.g., Kleiman, Riskind, Schaefer, & Weingarden, 2012), we relied on the 19 suicidal ideation items. The BSS has demonstrated strong psychometric properties and has been shown to predict a variety of suicidal behaviors such as gaining access to means to commit suicide and writing a suicide note (Beck, Brown, & Steer, 1997).

2.4. Analytic plan

We found evidence of positive skewness for suicidal ideation in the present data (skew = 6.07, SE = 0.13). This was expected, as suicide is a relatively low base-rate phenomenon. Given the non-normal distribution and to avoid violating the assumptions of regression, we log transformed BSS scores prior to conducting a set of hierarchical regression models. This technique is recommended by Keene (1995), and is commonly used in suicide research in populations with a low base rate, such as college students. We conducted separate regression models to test the two hypotheses that gratitude would moderate the relationship between (1) hopelessness and suicidal ideation and (2) depressive symptoms and suicidal ideation. Each model included two steps. The first step contained the main effects of hopelessness, depressive symptoms, and gratitude. The second step contained the relevant interaction (hopelessness $\times$ gratitude or depressive symptoms $\times$ gratitude). We controlled for the opposite predictor in the first step of each analysis (e.g., depressive symptoms when hopelessness was the independent variable) as a test of specificity. This was important because hopelessness and depressive symptoms are conceptually related and highly correlated in the present study. All main effects were mean-centered prior to calculating the interaction term according to the recommendations of Aiken and West (1991). Doing so reduces collinearity between the

independent variable and moderator, facilitating interpretation of the interaction (see Shieh, 2011).

3. Results

3.1. Sample characteristics

Table 1 displays alpha statistics, correlations, means, and standard deviations for the study variables. All variables were significantly correlated in the expected direction and had acceptable reliability (α's = .85–.90).

3.2. Hypothesis 1: gratitude as a buffer to the hopelessness/suicidal ideation relationship

The results of a regression analysis testing the hypothesis that gratitude would buffer the relationship between hopelessness and suicidal ideation are displayed in Table 2. The predictors from the first step accounted for 35% of the variance in BSS scores. Depressive symptoms and gratitude were the significant predictors in this step. The interaction between hopelessness and gratitude was significant in the second step and predicted an additional 1% of the variance in BSS scores.

Since the interaction was significant, we probed the slopes according to the recommendations of Aiken and West (1991). In Fig. 1, the relationship between gratitude and suicidal ideation is presented as a function of high vs. low levels of hopelessness (±1 SD). Among individuals with high levels of hopelessness, those with high levels of gratitude endorsed significantly lower levels of suicidal ideation than individuals with lower levels of gratitude (standardized simple slope = −0.011, $p < .001$). There was no significant effect of gratitude on suicidal ideation for individuals with low levels of hopelessness (standardized simple slope = −0.002, $p = .368$). Consistent with our hypothesis, this suggests that among individuals with high levels of hopelessness, those who have high levels of gratitude exhibit lower levels of suicidal ideation than those with low levels of gratitude. Among individuals with low levels of hopelessness, gratitude did not play a role in predicting suicidal ideation, which is consistent with the idea that the influence of a protective factor is only appreciable in the presence of a risk factor.

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

	1	2	3	4
1. Hopelessness (BHS)	.89			
2. Depressive symptoms (BDI)	.67***	.90		
3. Gratitude (GQ-6)	−.54***	−.36***	.88	
4. Suicidal ideation (BSS)	.48***	.54***	−.35***	.85
Mean	4.34	6.79	34.48	1.08
SD	4.29	7.27	6.85	3.34
Range	0–20	0–40	6–42	0–24

Notes: BHS = Beck Hopelessness Scale, GQ-6 = Gratitude Questionnaire, BDI = Beck Depression Inventory, BSS = Beck Suicide Scale (untransformed). Alpha coefficients are presented in diagonals.
*** $p < .001$.

Table 2
Synergistic relationship between gratitude and hopelessness on suicidal ideation.

	B	Std. error	*t*	*p*
Block 1				
Depressive symptoms (BDI)	0.019	0.002	7.51	<.001
Hopelessness (BHS)	0.002	0.005	0.33	.743
Gratitude (GQ)	−0.007	0.005	−2.81	.005
Block 2				
Hopelessness × gratitude	−0.001	<0.001	−2.41	.012

Note: BHS = Beck Hopelessness Scale, GQ-6 = Gratitude Questionnaire, BDI = Beck Depression Inventory, BSS = Beck Suicide Scale. Change statistics: Block 1 $R^2 = .35$, $p < .001$; Block 2 $R^2\Delta = .01$, $p < .01$.

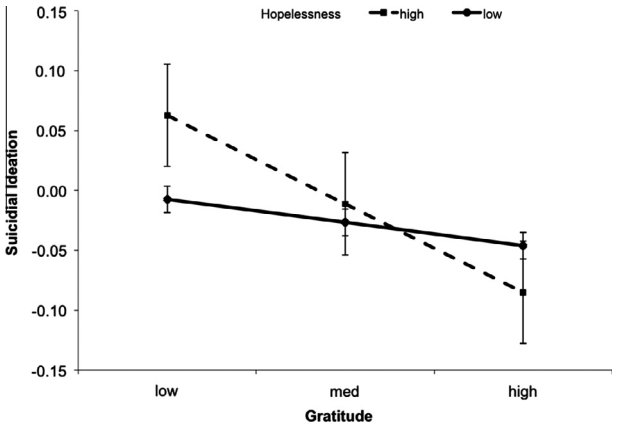

Fig. 1. Moderation effect of gratitude on the association between hopelessness and suicidal ideation, controlling for depressive symptoms.

Table 3
Synergistic relationship between gratitude and depressive symptoms on suicidal ideation.

	B	Std. error	*t*	*p*
Block 1				
Hopelessness (BHS)	0.004	0.005	0.86	.390
Depressive symptoms (BDI)	0.016	0.002	6.36	<.001
Gratitude (GQ-6)	−0.007	0.002	−3.09	.002
Block 2				
Depressive symptoms × gratitude	−0.001	<0.001	−3.69	<.001

Note: BHS = Beck Hopelessness Scale, GQ-6 = Gratitude Questionnaire, BDI = Beck Depression Inventory, BSS = Beck Suicide Scale. Change statistics: Block 1 $R^2 = .36$, $p < .001$; Block 2 $R^2\Delta = .02$, $p < .001$.

3.3. Hypothesis 2: gratitude as a buffer to the depressive symptoms/suicidal ideation relationship

The results of a regression analysis testing the hypothesis that gratitude buffers the relationship between depressive symptoms and suicidal ideation are displayed in Table 3. The predictors from the first step accounted for 36% of the variance in BSS scores. Depressive symptoms and gratitude were significant predictors in this step. The interaction between depressive symptoms and gratitude was significant in the second step and predicted an additional 2% of the variance in BSS scores. Given that the interaction term was significant, we probed the simple slopes according to the recommendations of Aiken and West (1991).

In Fig. 2, the relationship between gratitude and suicidal ideation is presented as a function of high vs. low levels of depressive symptoms (±1SD). As expected, among individuals with greater depressive symptoms, those with high levels of gratitude endorsed lower levels of suicidal ideation than those with lower levels of gratitude (standardized simple slope = −0.01, $p < .001$). There was no significant effect of gratitude on suicidal ideation for individuals with low levels of depressive symptoms (standardized simple slope < −0.001, $p = .584$). Thus, similar to the first hypothesis, gratitude serves as a protective factor against suicidal ideation among individuals with high levels of suicide risk (depressive symptoms), but had no effect for individuals who did not experience suicide risk.

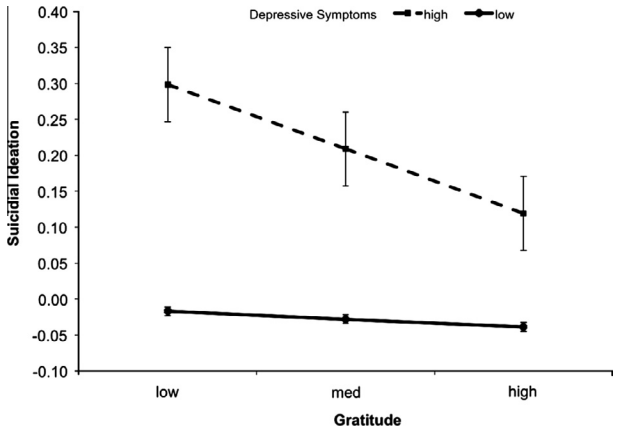

Fig. 2. Moderation effect of gratitude on the association between depressive symptoms and suicidal ideation, controlling for hopelessness.

3.4. Supplementary analyses within the context of age

Gratitude may vary throughout the lifespan as individuals accumulate more experiences to encourage gratitude throughout their lives. Thus, it may be that adults beyond college age benefit more from gratitude than younger adults. To that end, we conducted our analyses again using only typical college aged students (18–23), which made up 87% of our sample, in one analysis and non-traditional college aged students (those older than 23) in another analysis. When examining both groups separately (18–23, 23+), we found the same general pattern of results for gratitude as a buffer to both hopelessness ($b = -0.01$, $t = -2.82$, $p < .01$; $b = 0.01$, $t = -1.82$, $p < .05$, for age 18–23 and 23+, respectively) and depressive symptoms ($b = -0.01$, $t = -3.60$, $p < .001$; $b = -0.01$, $t = -2.09$, $p < .01$, for age 18–23 and 23+, respectively). Moreover, age and gratitude were not significantly correlated ($r = -.08$, $p = .13$) and gratitude and suicidal ideation did not vary as a function of age ($b < 0.01$, $t = -0.04$, $p = .66$). These results support the notion that gratitude functions as a protective factor in suicide in both traditionally and non-traditionally aged college students.

4. Discussion

In the present study we examined the role of gratitude as a protective factor in suicide. Generally, we found that, across all ages in our sample, gratitude buffers the effect of two suicide risk factors: hopelessness and depressive symptoms. To date, only one other published study has examined the association with gratitude and suicidality (Li et al., 2012), and ours is the first to focus on adults and address synergistic effects with risk factors. Our work illustrates the importance of addressing risk and resiliency factors simultaneously. That is, examining protective factors in isolation may only describe individuals who are not currently experiencing the target phenomenon (i.e., suicidal ideation). Examining protective factors within the context of risk allows examinations of what prevents individuals at risk for the target phenomenon (i.e., those with high levels of depressive symptoms) from actually experiencing the target phenomena.

An important general finding was that gratitude only functioned as a protective factor in the presence of a risk factor. That is, for individuals not at risk for suicide (i.e., they had low levels of hopelessness or suicidal ideation), the presence or absence of a protective factor had no bearing on their levels of suicidal ideation. Indeed, the line for low hopelessness and low depressive symptoms was flat or nearly flat across both groups. This is consistent with the general finding that protective factors are most useful in the presence of a risk factor (Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001).

The ability for gratitude to be easily modified highlights the most important implication of our findings (Emmons & McCullough, 2003; Sheldon & Lyubomirsky, 2006). Since gratitude can be modified, suicide prevention programs could be enhanced by direct attempts to increase the experience and expression of gratitude, and the general appreciation of positive aspects of daily life. Furthermore, gratitude interventions are easy to implement. Interventions can be delivered in an efficient manner through web-based platforms with exercises as simple as writing a daily gratitude list. For example, free gratitude journal applications are available for iPhones (www.signalpatterns.com) and Android Smartphones (http://www.goo.gl/2g3C0). The availability of such interventions is important because internet-based interventions increase the accessibility of therapy to those who are unable (due to the cost or lack of convenience) or unwilling (due to stigma) to attend therapy (Bennett & Glasgow, 2009). Although none of the extant gratitude interventions have been directly applied to suicide, existing studies find that gratitude reduces the severity of related mental health issues such as anxiety and depression (Geraghty, Wood, & Hyland, 2010; Sin & Lyubomirsky, 2009). Thus, gratitude interventions might additionally ameliorate suicidal ideation. In sum, gratitude interventions could supplement existing suicide treatment and prevention protocols with minimal effort and opportunity cost. However, it is important to understand the possible clinical implications of our findings within the overall context that this study was cross-sectional in nature and used self-report measures in a convenience sample. Thus, before significant resources are devoted to testing gratitude interventions for suicide, more research is needed to replicate our basic findings in more complex samples.

There are several potential mechanisms for how gratitude serves as a protective factor in suicide. First, gratitude is linked to more positive emotions and more rewarding social interactions in daily life (McCullough et al., 2004). Positive emotions are associated with less suicidality in a sample of primary care patients 65 years and older (Hirsch, Duberstein, Chapman, & Lyness, 2007), but it seems plausible that individuals of any age could benefit from more frequent, enduring positive emotions. A sense of belonging and meaning in life from social interactions that are rewarding and appreciated can be expected to strengthen the desire to remain alive for as long as possible (Fredrickson, 2001). Second, gratitude is associated with greater perceived social support (Wood, Maltby, Gillett et al., 2008). There is growing evidence that social support functions as a protective factor in suicide (Clum & Febbraro, 1994; Kleiman & Liu, 2013; Kleiman et al., 2012). Having access to social support, and feeling a sense of belonging, provides evidence that an individual is not a burden on the people around them (a risk factor for suicide; Joiner, 2005). Taken together, gratitude might function as a distal factor that elicits multiple benefits that protect people from the idea (much less the act) of trying to harm or kill oneself. Alternatively, these other emotional and interpersonal benefits might cause individuals to feel grateful (i.e., individuals are grateful for their social network) which in turn, immediately affirms life instead of death.

4.1. Limitations and future directions

Although promising, several interpretative caveats require consideration. First, our study was cross-sectional and does not allow for tests of causality. Future researchers should directly manipulate gratitude and examine the influence on suicidal thoughts (through implicit and explicit measurement approaches). With longitudinal assessments, researchers can examine the directionality and synergy among gratitude, depressive symptoms, hopeless-

ness, and suicidality. In future studies, the assessment of gratitude should be more comprehensive to span thoughts, feelings, and behaviors in social contexts. Second, we used a college sample, which may limit generalizability. However, the range of ages in the present study (18–60) is more representative of a community sample than "typical" undergraduate samples. Third, our sample was primarily female, which limits generalizability to both genders. In the future, researchers could replicate our findings in a sample with equal numbers of both males and females. Finally, the next generation of studies should examine actual suicide attempts rather than self-reported suicidal ideation, since past suicide attempts are a stronger predictor of future suicidality than current suicidal ideation (Joiner et al., 2005).

The findings of this study offer a first step into examining gratitude as a protective factor in suicide and offer several opportunities for clinical science. Future researchers may wish to examine gratitude in everyday life, rather than as a trait disposition. Doing so may help to answer questions of the duration of gratitude effects on suicide reduction (e.g., does an increase in gratitude today reduce suicide tomorrow or the following week?) and what is the most appropriate dose for an efficacious gratitude intervention (e.g., do at-risk individuals need to engage in daily gratitude interventions or is once a week sufficient?). Clinically, these findings may hold promise as low-cost, high-impact tools to enhance existing suicide interventions.

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