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Emphasis on Autonomy and Propensity for Suicidal Behavior in Younger and Older Adults

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Abstract

A cognitive style marked by emphasis on autonomy has been linked to negative outcomes throughout the life span. Two preliminary studies are presented that examined factors on a measure of autonomy (Personal Style Inventory-Revised) in relation to propensity for suicidal behavior (Suicidal Behaviors Questionnaire-14; SBQ-14). Perfectionism, $B = .15$, $SE = 0.03$, $p < .01$, and Defensive Separation, $B = .04$, $SE = 0.01$, $p \leq .01$, predicted SBQ-14 in younger adults. Need for Control, $B = .234$, $SE = 0.10$, $p < .05$, predicted SBQ-14 in older adults. Findings suggest that aspects of autonomy may be relevant to understanding suicidal behavior; however, more research is needed examining the association between autonomy and suicidal behavior in the context of depression. Nonetheless, these studies suggest a promising avenue for future research.

Suicidal behavior continues to be a major public health problem in the United States (CDC, 2012). Despite increased public health efforts and research endeavors in recent years, rates of death by suicide in the United States have remained steady at around 11.8/100,000 (CDC, 2012). In 2008, the last year for which we have data, suicide was the tenth leading cause of death in the United States (McIntosh, 2011). To increase our ability to prevent and manage suicidal behaviors, more information is needed examining variables that predict the development of suicide risk. In this article, two studies examining the possibility that a heavy emphasis on autonomy is associated with the development of suicide risk in both younger and older adults are presented.

Autonomy was originally proposed by Beck, Epstein, and Harrison (1982) as one of the two “central value systems” that confers increased risk for depression (the other value system is sociotropy; p. 3). Autonomy, as a cognitive style, should be differentiated from the concept of autonomy in developmental research on human agency. Autonomy, as it relates to human agency, is an adaptive human behavior that facilitates one’s ability to intentionally make things happen in one’s environment (Bandura, 2001). Autonomy, as it is discussed in Beck’s framework, may be defined as a cluster of long-standing behaviors reflecting an excessive,

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perfectionistic value placed on achievement, control, and being separate from others (Bieling, Beck, & Brown, 2004; Robins et al., 1994). Robins et al. (1994) have suggested that these values lead to high levels of self-criticism, cognitive inflexibility, and maladaptive isolation. This suggestion is of interest because self-criticism, cognitive inflexibility, and social isolation are demonstrated risk factors for suicidal behavior across the life span (for review see Beautrais, 2000; Conwell & Thompson, 2008).

In general, both cross-sectional and prospective research have supported the notion that autonomy is related to depressive symptoms in younger adults (e.g., Bieling et al., 2004; Robins, Bagby, Rector, Lynch, & Kennedy, 1997; Robins et al., 1994). Research on autonomy in late life has also generally supported the hypothesis that older adults who score high on measures of autonomy (or on one or more of the subscales of autonomy) are at risk for depressive symptoms (e.g., Mazure, Maciejewski, Jacobs, & Bruce, 2002; Morse & Robins, 2005). Interestingly, it appears that one subscale of autonomy, the Need for Control subscale, is associated with depressive symptoms in older adults (Mazure & Maciejewski, 2003).

There is little research, however, examining the relation between autonomy and suicidal behavior. Two previous studies examined the relation between autonomy and the different items of the Beck Depression Inventory (BDI; Beck, Ward, & Mendelson, 1961), which includes one item assessing suicide ideation. In the first study, over 2,067 adults (*M*age not reported) being treated for depression in an outpatient clinic were administered the Sociotropy–Autonomy Scale (SAS; Bieling et al., 2004) and the BDI (Clark, Steer, Haslam, Beck, & Brown, 1997). In this study, the suicide ideation item on the BDI was not significantly correlated with autonomy. It is important to note that it is possible that the lack of findings in this study may be a result of researchers using the SAS to measure autonomy without accounting for the fact that the Autonomy scale of the SAS has both positive and negative factors. In the second study (Robins et al., 1997), 103 adults (*M*age = 39.8) being treated for depression in an outpatient clinic were administered the BDI and the Personal Style Inventory–Revised (PSI-II; Robins et al., 1994). In this study, the suicide ideation item of the BDI was significantly correlated with autonomy.

All in all, there is some evidence suggesting that autonomy, as a long-standing vulnerability risk factor, might help to explain the development of suicidal behavior at different points in the life span. However, past research has not addressed several important questions. First, very few studies have directly examined the possibility that autonomy is related to suicide ideation or behavior. Past studies have examined this question using one item from the BDI, but it would be important to address this issue using a measure that has been found to reliably and validly assess suicidal behavior. Second, as some research with older adults has demonstrated that only some subscales of autonomy are associated with depressive symptoms (Mazure & Maciejewski, 2003), it would be interesting to examine the possibility that the different subscales of autonomy are differentially associated with suicidal behavior in younger and older adults. Finally, because evidence suggests that suicidal behaviors differ by sex in both younger and older adults (Conwell & Thompson, 2008; Nock et al., 2008), it would also be interesting to examine the question of whether the association between the subscales of autonomy and suicidal behavior in younger and older adults was moderated by

sex. Therefore, we present two preliminary studies that examined the association between aspects of autonomy and the propensity for suicidal behavior. The first study set out to examine the relation between autonomy and the subscales of autonomy, as they are measured on the PSI-II, and propensity for suicidal behavior in younger adults. Because past research has demonstrated that the relation between autonomy and depressive symptoms may differ in late life (Mazure & Maciejewski, 2003), the second study set out to examine whether autonomy and the subscales of autonomy were also associated with propensity for suicidal behavior in older adults.

STUDY 1

The purpose of our first study was to examine whether autonomy and the subscales of autonomy, as they are measured on the PSI-II, are associated with suicidal behavior in younger adults. We also examined whether the association between the subscales of autonomy and suicidal behavior was moderated by sex. Based on past research examining the relation between suicide ideation and autonomy in younger adults, we hypothesized that autonomy would be positively associated with suicidal behavior in a sample of younger adults (e.g., Bieling et al., 2004). Because we were also interested in whether the different subscales of autonomy were differentially associated with suicide ideation, we also hypothesized that all of the subscales of autonomy (Need for Control, Perfectionism, and Defensive Separation) would be significantly, positively associated with propensity for suicidal behavior in our younger adult sample.

Method

Participants—The data utilized in this study were part of a larger data collection of variables related to suicidal behavior in younger adults. The younger adults who participated in this study were recruited via undergraduate psychology courses at a large public university in the southeastern United States. The participants received extra credit for their participation in the study. The sample that was used for this study consisted of 636 adults aged 18 to 24. Women comprised 70.9% of the sample. Most of the participants were European American (92.2%), which is consistent with the demographic characteristics of the region in which data collection took place.

Measures—The Personal Style Inventory–Revised (PSI-II; Robins et al., 1994) is a measure of sociotropy and autonomy, which can be conceptualized, respectively, as excessive concern about relationships and excessive concern about achievement. Research has demonstrated that the PSI-II has good internal reliability (Cronbach's alpha between 0.84 and 0.90) and good construct validity (Robins et al., 1994). For the purposes of the present study, only the Autonomy scale and its three subscales were utilized. The Autonomy scale of the PSI-II is a 24-item scale that consists of three subscales: Perfectionism (e.g., "It bothers me when I feel that I am only average and ordinary"); Need for Control (e.g., "I become upset more than most people I know when limits are placed on my personal independence and freedom"); and Defensive Separation (e.g., "I tend to keep other people at a distance"). Respondents are asked to rate each item based on a 6-point Likert-type scale ranging from 1 is (*strongly disagree*) to 6 (*strongly agree*). Scores on this scale range from

24 to 144, with higher scores indicating higher levels of autonomy. All three subscales were continuous variables. In the present study, internal consistency for the PSI-II Autonomy scale was good (Cronbach's $\alpha = 0.89$). In terms of the subscales of the PSI-II, internal consistency for the 4-item Perfectionism subscale was low (Cronbach's $\alpha = 0.52$), internal consistency for the 8-item Need for Control subscale was good (Cronbach's $\alpha = 0.80$), and internal consistency for the 12-item Defensive Separation subscale was also good (Cronbach's $\alpha = 0.80$).

The Suicidal Behaviors Questionnaire (SBQ-14; Linehan, 1981) is a 14-item self-report measure designed to assess propensity for suicidal behavior with items assessing past suicide ideation, future suicide ideation, past suicide threats, future suicide attempts, and likelihood of dying in a future suicide attempt. It was used in the present study as a measure of suicide ideation and intent. For ethical reasons, one of the items of this measure, which asked about current plans for suicide, was not included in this anonymous study. A total score for this measure was derived by summing all of the items, with higher scores indicating higher levels of propensity for suicidal behavior. The SBQ-14 has demonstrated good internal consistency ($r = .73-.92$; Addis & Linehan, 1989). In terms of construct validity, a principal components factor analysis demonstrated that the SBQ-14 is unidimensional. In terms of convergent validity, the total score of the SBQ-14 is moderately, positively, correlated ($r = .55-.62$; Linehan & Addis, 1990) with the Beck Scale for Suicidal Ideation (Beck & Steer, 1991), the BDI (Beck et al., 1961), and the Beck Hopelessness Scale (Beck & Steer, 1993). Finally, the short-form of the SBQ (the SBQ-R) has demonstrated excellent area under the curve (AUC) scores (0.96), which indicates that it correctly classifies those with and without suicide risk (Osman, Bagge, Guitierrez, Kooper, & Barrios, 2001). In the present study, internal consistency for the SBQ was good (Cronbach's $\alpha = 0.90$).

Procedure—This study was approved by the institutional review board of West Virginia University. Participants indicated their informed consent electronically and completed the questionnaire through webbased interface software developed by SONA Systems. The participants were able to complete the survey at a computer of their choice, at any hour of the day. They were provided with contact information for researchers involved in this study, which they could utilize in the event they had questions about the survey. Participants were also provided with a list of local mental health providers and encouraged to contact a provider in the event they were experiencing significant psychological distress. Participants' data were kept anonymous to the researchers via SONA's software system. Anonymous databases for this study were kept on password-protected computers in locked rooms.

Data Analysis—All analyses were conducted using Predictive Analytics Software (PASW) statistical software (version 18.0; IBM Corp., Armonk, NY, USA). A Pearson's correlation was conducted to examine the association between the Autonomy scale of the PSI-II and propensity for suicidal behavior. Two multiple linear regressions were used to test a model examining the association between propensity for suicidal behavior and the three subscales of the Autonomy scale of the PSI-II and to test a model examining the possibility that the association between suicidal behavior and the three subscales of autonomy was moderated by sex. For the multiple regression analysis examining the interactions between

sex and the subscales of autonomy, all continuous variables were centered prior to being entered into the model.

Prior to conducting the analyses for Study 1, preliminary analyses were conducted to insure that data were not missing systematically. All of the variables of interest had less than 5% missing data. Individuals with missing data did not significantly differ from individuals without missing data in terms of scores on the Autonomy scale, the Autonomy subscales, or scores on the SBQ-14. Given these findings, it was determined that data were not missing systematically and, therefore, records with missing data were excluded from analyses through pairwise deletion.

Preliminary analyses were also conducted to test the assumptions of the multiple linear regression analyses. Scores on the SBQ-14 (the dependent variable in this analysis) were positively skewed, as would be expected because the study used a community sample. To meet the assumption of normality for the multiple regression analyses, the SBQ-14 variable was transformed using a square root transformation. After this transformation, all assumptions for the analyses in this study were met.

Given the fact that our outcome variable was skewed, in addition to conducting multiple regression analyses, we also analyzed dichotomized data using Poisson regression models and negative binomial regression models. In these analyses, the SBQ-14 scores were dichotomized. The first group reflected scores of individuals who denied all items on the SBQ-14, and the second group endorsed any items. Using these alternative strategies, the results did not differ from the results of the multiple regression analyses. As such, only the results of the multiple regression analyses are presented next.

Results

The descriptive statistics for and intercorrelations among the variables of interest in this study are presented in Table 1. Approximately 3% of the sample reported that they had seriously considered suicide in their lifetimes, and approximately 4% of the sample reported that they had often thought about killing themselves in the last year. Approximately 1% of the sample reported that there was some chance that they would attempt suicide in the next year, and approximately 4% of the sample reported having a plan for how they would go about killing themselves.

As is evident in this table, the total score on the Autonomy scale and each of the individual Autonomy subscales was significantly, positively associated with the SBQ-14 scores.

Results of the first multiple regression analysis demonstrated that, of the three subscales of the Autonomy scale of the PSI-II, only Defensive Separation, $b = .11$, $SE = 0.03$, $p < .01$, 95% CI = 0.05, 0.16, and Perfectionism, $b = .38$, $SE = 0.06$, $p < .01$, 95% CI = 0.25, 0.50, were significantly related to SBQ-14 scores. Need for Control was not significantly associated with SBQ-14 scores in this sample, $b = -.05$, $SE = 0.04$, $p > .05$, 95% CI = $-.01$, 0.04. The three-predictor model accounted for 12% ($f^2 = .14$) of the variance in propensity for suicidal behavior, $F(3, 612) = 22.18$, $p < .01$. A 95% CI for R^2 extended from 0.06 to 0.14.

Results of the second multiple regression analysis demonstrated, first of all, that sex was not significantly associated with SBQ-14 scores in this sample, $b = -.18$, $SE = 0.13$, $p > .05$, 95% CI = $-0.51, 0.16$. Second, the interaction terms between sex and Need for Control, $b = .17$, $SE = 0.02$, $p > .05$, 95% CI = $-0.03, 0.60$, between sex and Defensive Separation, $b = -.22$, $SE = 0.02$, $p > .05$, 95% CI = $-0.05, 0.007$, and between sex and Perfectionism, $b = -.02$, $SE = 0.03$, $p > .05$, 95% CI = $-0.09, 0.04$, were also not significantly related to SBQ-14 scores in this sample. The model including the three subscales of Autonomy, sex, and the interactions between sex and the three subscales of Autonomy was significant, $F(7, 586) = 22.54$, $p < .01$.

Conclusions

Our hypotheses for Study 1 were partially supported. Results indicated that autonomy was significantly associated with suicidal behavior in younger adults. When the subscales of autonomy were examined separately, we found that only the Defensive Separation and Perfectionism subscales were significantly, positively associated with propensity for suicidal behavior in younger adults. Finally, we found that, in this sample, sex did not moderate the association between the subscales of autonomy and propensity for suicidal behavior. Given these findings, we set out to determine whether autonomy and the subscales of autonomy were also associated with propensity for suicidal behavior in older adults.

STUDY 2

The purpose of our second study was to examine whether the subscales of autonomy, as they are measured on the PSI-II, were associated with propensity for suicidal behavior in older adults. We also examined whether the association between the subscales of autonomy and suicidal behavior was moderated by sex in older adults. Based on the results of Study 1 and prior published research on autonomy and depression (e.g., Mazure et al., 2002), it was hypothesized that autonomy would be associated with propensity for suicidal behavior in a sample of older adults. Because previous research has demonstrated that the subscales of autonomy are differentially associated with depressive symptoms in late life (Mazure & Maciejewski, 2003), it was also hypothesized that all of the subscales of autonomy (Need for Control, Perfectionism, and Defensive Separation) would be significantly, positively associated with suicidal behavior in our older adult sample.

Method

Participants—The data utilized in this study were part of a larger data collection of variables related to suicide risk in older adults. The older adults who participated in this study were recruited via a commercially purchased mailing list with names and addresses of older adults residing in West Virginia, Pennsylvania, New Jersey, and Ohio. The participants were contacted by mail and asked to complete a written version of the survey. In all, 2,500 packets were mailed out as part of this study. For compensation, the participants were given the opportunity to win one of two raffle prizes of \$50 each.

The sample that was used for this study consisted of 88 adults aged 65 or older. Of these participants, 52.9% were aged 65 to 74 years old, 37.9% were aged 75 to 84, and 9.2% were

aged 85 or older. The sample consisted of slightly more men (52.9%) than women. Most of the participants were European American (95.3%), consistent with the ethnic makeup of the region. With respect to marital status, 54.7% of the participants were married, 31.4% were widowed, 9.3% were separated or divorced, and 4.7% were never married. The sample was highly educated (more than 50% of the sample reported some college education or a college degree).

Measures—To assess autonomy and suicide risk, the PSI-II Autonomy scale and the SBQ-14 were used, respectively. Descriptions of these measures can be found in the Measures section of Study 1 (see above). In the Study 2 sample, internal consistency was good for the Autonomy scale of the PSI-II (Cronbach's $\alpha = 0.90$). In terms of the subscales of the Autonomy scale, internal consistency for the 4-item Perfectionism subscale was low (Cronbach's $\alpha = 0.51$), internal consistency for the 8-item Need for Control subscale was good (Cronbach's $\alpha = 0.78$), and internal consistency for the 12-item Defensive Separation subscale was also good (Cronbach's $\alpha = 0.82$). Finally, internal consistency for the SBQ-14 was also good (Cronbach's $\alpha = 0.80$).

Procedure—This study was approved by the institutional review board of West Virginia University. The participants were contacted by mail with a survey packet. Participants were asked to complete one copy of the informed consent form and the survey. They were provided with a toll-free telephone number they could call in the event they had questions about the survey. The packet also included a list of mental health providers, which the participant was encouraged to contact in the event that he or she was experiencing significant psychological distress. Participants were asked to return the survey and the informed consent form using a stamped and self-addressed envelope. Each person was also invited to return the raffle ticket with their name and address on it. Raffle tickets were immediately removed from returned data packets (which were kept in a locked cabinet) to ensure the confidentiality of the data. After data collection for this study was complete, a drawing was held using the raffle tickets. The two participants chosen from this drawing received \$50 each.

Data Analysis—All analyses were conducted using PASW. Two multiple linear regressions were used to test a model examining the association between propensity for suicidal behavior and the three subfactors of the Autonomy scale of the PSI-II and to test a model examining the possibility that the association between suicidal behavior and the three subscales of autonomy was moderated by sex. For the multiple regression analysis examining the interactions between sex and the subscales of autonomy, all continuous variables were centered prior to being entered into the model. Substantial amounts (between 8% and 15%) of data were missing for each of the variables used in these analyses. Individuals with missing data did not significantly differ from individuals without missing data in terms of scores on the Autonomy scale, the Autonomy subscales, or scores on the SBQ-14.

Given the results of the missing data analyses, it appears that the data in this study were missing at random (MAR). Researchers have suggested that the most appropriate way to handle MAR data is to use multiple imputation to estimate missing values (Schafer, 1999).

In the present study, five different simulated data sets were created, iteratively analyzed, and combined into pooled statistics.

Prior to conducting the analyses for this study, preliminary analyses were conducted to ascertain whether the assumptions of a multiple linear regression analysis were met. As was the case in Study 1, it was expected that scores on the SBQ-14 (the dependent variable in this analysis) would be positively skewed, and they were. To meet the assumption of normality for the multiple regression analysis, the SBQ-14 variable was transformed using a square root transformation. After this transformation, all assumptions for the analyses in this study were met.

Given the fact that our outcome variable was skewed, in addition to conducting multiple regression analyses, we also analyzed these data using Poisson regression models and negative binomial regression models. In these analyses, the SBQ-14 scores were dichotomized as above. Using these alternative strategies, the results did not differ from the results of the multiple regression analyses. As such, only the results of the multiple regression analyses are presented here.

Results

The pooled means and Pearson's correlations between the variables in this study are presented in Table 2. Approximately 4.5% of the sample reported that they had seriously considered suicide in their life-times, and approximately 2.3% of the sample reported that they had often thought about killing themselves in the last year. Approximately 1% of the sample reported that there was some chance that they would attempt suicide in the next year, and approximately 7% of the sample reported having a plan for how they would go about killing themselves.

As is evident in this table, only the Need for Control subscale of the Autonomy scale was significantly, positively associated with SBQ-14 scores.

Pooled results of the first multiple regression analysis demonstrated that, of the three subfactors of the Autonomy scale of the PSI-II, only Need for Control, $b = .21$, $SE = 0.08$, $p < .01$, 95%CI = 0.05, 0.37, was significantly, positively associated with SBQ-14 scores in this sample. Defensive Separation, $b = -.04$, $SE = 0.06$, $p > .013$, 95% CI = -0.14, 0.07, and Perfectionism, $b = -.10$, $SE = 0.14$, $p > .013$, 95%CI = -0.38, 0.19, were not significantly associated with SBQ-14 scores in this sample. The three-predictor model accounted for about 9% of the variance (R^2 ranged from 0.07 to 0.12 in the imputed data; $f^2 \approx .10$) in SBQ-14 scores.

Pooled results of the second multiple regression analysis demonstrated, first of all, that sex was not significantly associated with SBQ-14 scores in this sample, $b = 8.94$, $SE = 7.26$, $p > .05$, 95%CI = -5.52, 23.42. Second, the interaction terms between sex and Need for Control, $b = .04$, $SE = 0.19$, $p > .05$, 95%CI = 0.05, 0.79, between sex and Defensive Separation, $b = -.12$, $SE = 0.14$, $p > .05$, 95%CI = -0.40, 0.16, and between sex and Perfectionism, $b = .39$, $SE = 0.28$, $p > .05$, 95%CI = -0.16, 0.94, were also not significantly related to SBQ-14 scores in this sample.

Conclusions

The results of Study 2 indicate that only the Need for Control subscale of autonomy was associated with propensity for suicidal behavior in older adults.

DISCUSSION

The results of these studies provide preliminary evidence that aspects of autonomy are associated with propensity for suicidal behavior in younger and older adults. In younger adults, propensity for suicidal behavior was associated with perfectionism and defensive separation, and in older adults, only need for control was related to increased propensity for suicidal behavior. These findings are consistent with the possibility that dimensions of autonomy may be differentially related to suicide risk in younger and older adults. This possibility is intriguing as suicidal behavior also differs across the life span (Conwell & Thompson, 2008).

The results of these two studies are consistent with other research examining risk factors for suicide. In terms of the results of Study 1, previous research has demonstrated an association between perfectionism and suicide ideation in younger adults (for a review, see Hewitt, Flett, Sherry, & Caelian, 2006). In addition, numerous studies have demonstrated that social isolation (which is closely related to defensive separation) is a risk factor for suicide across the life span (e.g., see Cavanagh, Carson, Sharpe, & Lawrie, 2003). In terms of the results of Study 2, it is important to note that the items of the Need for Control subscale of the Autonomy scale seem to reflect inflexibility. Interestingly, research has demonstrated an association between inflexibility and suicidal behavior in late life. For example, research has shown that low openness to experience (a personality trait within the Five Factor Model that is associated with inflexibility; Costa & McCrae, 1992) is associated with suicide in older adults but not in younger adults (Duberstein, 1996).

Interestingly, sex did not moderate the association between the subscales of autonomy and propensity for suicidal behavior in these studies. Examinations of sex differences in autonomy have demonstrated mixed results. Some research has demonstrated that men with a high need for autonomy are more likely to develop depressive symptoms in the face of stressors that threaten their independence (Clark et al., 1997); however, other research has failed to find an association between autonomy and sex (Mazure & Maciejewski, 2003). Thus, it may be that autonomy is not associated with sex. In addition, although research has consistently demonstrated that in the United States men are at higher risk for death by suicide across the life span and that women are more likely to engage in suicide attempts (CDC, 2012), research examining suicide ideation has been mixed. Some large epidemiological studies have demonstrated that women have higher rates of suicide ideation among younger adults (Nock et al., 2008); however, among older adults, some research has demonstrated that women have higher rates of passive suicide ideation and men have higher rates of active suicide ideation (Bartels et al., 2002). More research is needed examining the possibility that sex may moderate the association between autonomy and different types of suicidal behavior.

Although the results of these studies provide important evidence of an additional factor associated with suicide risk in both younger and older adults, some limitations should be noted. One of the main limitations was the unusually low response rate to our mailed survey in Study 2. The concern related to our low response rate is the possibility that our sample for Study 2 was not representative. Despite our low response rate, however, it is worth noting that our sample closely matched the demographics of the region in which data were collected (U.S. Census, 2008). A second limitation centers on the fact that depressive symptoms were not examined in these studies. Depressive symptoms are an important risk factor for suicide across the life span, but especially among older adults (Conwell & Thompson, 2008). It is possible that the relations between different subscales of autonomy and propensity for suicidal behavior we found in the current study reflect the fact that individuals high in autonomy also have higher levels of depression, which contributes to suicide risk. Future research must address this possibility by examining differences in levels of autonomy among individuals with depression and suicide ideation and individuals with depression who do not endorse suicide ideation. Given this limitation, the studies presented here must be considered only preliminary investigations of the association between autonomy and suicidal behavior. Nonetheless, the results of these studies suggest a promising avenue for future research examining unique risk factors for suicide in both younger and older adults. Finally, it is possible that both of the studies presented here were subject to selection biases. It seems possible that individuals who place a high value on autonomy may be particularly resistant to participating in research. If this is the case, our ability to find effects in these studies may have been limited. Nonetheless, significant effects were detected in both samples.

The ultimate goal of most studies examining risk factors for suicidal behavior is to facilitate the development of interventions that might ameliorate risk for death by suicide. The present study and other similar research could be utilized to help identify and create interventions specifically designed for individuals who demonstrate a cognitive style that heavily emphasizes autonomy and personal control. For example, it may be possible to modify existing interventions designed to increase flexibility [e.g., Acceptance and Commitment Therapy (Hayes, Strosahl, & Wilson, 2003) or Mindfulness-Based Cognitive Therapy for Depression (Segal, Williams, & Teasdale, 2002)] to specifically address the risk factors identified by this line of research.

The present studies provide useful information about potential risk factors for suicidal behavior in both younger and older adults. It appears that a high need for control is associated with suicide risk in older adults, and perfectionism and maladaptive isolation is associated with suicide risk in younger adults. The results of these studies have important implications for the development of intervention and prevention programs in that they suggest ways we may intervene to prevent suicide across the life span.

REFERENCES

- ADDIS, M.; LINEHAN, MM. Predicting suicidal behavior: Psychometric properties of the Suicidal Behaviors Questionnaire. Poster presented at the annual meeting of the Association for the Advancement of Behavior Therapy; Washington, DC: 1989.

- BANDURA A. Social cognitive theory: An agentic perspective. *Annual Review of Psychology*. 2001; 52:1, 26.
- BARTELS SJ, COAKLEY E, OXMAN TE, CONSTANTINO G, OSLIN D, CHEN H, et al. Suicidal and death ideation in older primary care patients with depression, anxiety, and at-risk alcohol use. *American Journal of Geriatric Psychiatry*. 2002; 10:417, 427. [PubMed: 12095901]
- BEAUTRAIS AL. Risk factors for suicide and attempted suicide among young people. *Australian and New Zealand Journal of Psychiatry*. 2000; 34:420, 436. [PubMed: 10881966]
- BECK, AT.; EPSTEIN, N.; HARRISON, R. Cognitions, attitudes, and personality dimensions in depression. Paper presented at the annual meeting of the Society for Psychotherapy Research; Smugglers Notch, Vermont; 1982.
- BECK, A.; STEER, RA. Manual for the Beck Scale for Suicidal Ideation. The Psychological Corporation; San Antonio, TX: 1991.
- BECK, AT.; STEER, RA. Beck Hopelessness Scale: Manual. The Psychological Corporation; San Antonio, TX: 1993.
- BECK AT, WARD C, MENDELSON M. Beck Depression Inventory (BDI). *Archives of General Psychiatry*. 1961; 4:561, 571. [PubMed: 13688369]
- BIELING PJ, BECK AT, BROWN GK. Stability and change of sociotropy and autonomy subscales in cognitive therapy of depression. *Journal of Cognitive Psychotherapy*. 2004; 18:135, 148.
- CAVANAGH JTO, CARSON AJ, SHARPE M, LAWRIE SM. Psychological autopsy studies of suicide: A systematic review. *Psychological Medicine*. 2003; 33:395, 405. [PubMed: 12701661]
- CENTER FOR DISEASE CONTROL (CDC). Web-based injury statistics query and reporting system (WISQARS). National Center for Injury Prevention and Control; 2012. Retrieved January 3, 2012, from <http://www.cdc.gov/ncipc/wisqars/default.htm>
- CLARK DA, STEER RA, HASLAM N, BECK AT, BROWN GK. Personality vulnerability, psychiatric diagnoses, and symptoms: Cluster analyses of the sociotropy-autonomy subscales. *Cognitive Therapy and Research*. 1997; 21:267, 283.
- CONWELL Y, THOMPSON C. Suicidal behaviors in elders. *Psychiatric Clinics of North America*. 2008; 31:333, 356. [PubMed: 18439452]
- COSTA, PT.; MCCRAE, RR. Revised NEO personality inventory and NEO five factor inventory: Professional manual. PAR; Odessa, FL: 1992.
- DUBERSTEIN, PR. Openness to experience and completed suicide across the second half of life. In: PEARSON, JL.; CONWELL, Y., editors. *Suicide and aging: International perspectives*. Springer; New York: 1996. p. 49-64.
- HAYES, SC.; STROSAHL, KD.; WILSON, KG. Acceptance and commitment therapy: An experiential approach to behavior change. Guilford; New York: 2003.
- HEWITT, PL.; FLETT, GL.; SHERRY, SB.; CAELIAN, C. Trait perfectionism dimensions and suicidal behavior. In: ELLIS, TE., editor. *Cognition and suicide: Theory, research, and therapy*. American Psychological Association; Washington DC: 2006. p. 215-235.
- LINEHAN, M. Suicidal behaviors questionnaire. University of Washington; Seattle, WA: 1981. Unpublished inventory
- LINEHAN, MM.; ADDIS, M. Screening for suicidal behaviors: The suicidal behaviors questionnaire. University of Washington; Seattle, WA: 1990. Unpublished manuscript
- MAZURE CM, MACIEJEWSKI PK. A model of risk for major depression: Effects of life stress and cognitive style vary by age. *Depression and Anxiety*. 2003; 17:26, 33. [PubMed: 12577275]
- MAZURE CM, MACIEJEWSKI PK, JACOBS SC, BRUCE ML. Stressful life events interacting with cognitive/personality styles to predict late-onset major depression. *American Journal of Geriatric Psychiatry*. 2002; 10:297, 304. [PubMed: 11994217]
- MCINTOSH, JL. U.S.A. Suicide: 2008 Official final data. 2011. FOR THE AMERICAN ASSOCIATION OF SUICIDOLOGY Retrieved October 18, 2011, from <http://www.suicidology.org>
- MORSE J, ROBINS C. Personality-life event congruence effects in late-life depression. *Journal of Affective Disorders*. 2005; 84:25, 31. [PubMed: 15620382]

- NOCK MK, BORGES G, BROMET EJ, ALONSO J, ANGERMEYER M, BEAUTRAIS A, et al. Cross-national prevalence and risk factors for suicidal ideation, plans, and attempts. *The British Journal of Psychiatry*. 2008; 192:98, 105. [PubMed: 18245022]
- OSMAN A, BAGGE CL, GUITIERREZ PM, KOOPER BA, BARRIOS FX. The Suicidal Behaviors Questionnaire-Revised (SBQ-R): Validation with clinical and nonclinical samples. *Assessment*. 2001; 5:443, 454.
- ROBINS CJ, BAGBY RM, RECTOR NA, LYNCH TR, KENNEDY SH. Sociotropy, autonomy, and patterns of symptoms in patients with major depression: A comparison of dimensional and categorical approaches. *Cognitive Therapy and Research*. 1997; 21:285, 300.
- ROBINS CJ, LADD J, WELKOWITZ J, BLANEY PH, DIAZ R, KUTCHER G. The Personal Style Inventory: Preliminary validation studies of new measures of sociotropy and autonomy. *Journal of Psychopathology and Behavioral Assessment*. 1994; 16:277, 300.
- SCHAFER JL. Multiple imputation: A primer. *Statistical Methods in Medical Research*. 1999; 8:3, 15. [PubMed: 10347857]
- SEGAL, ZV.; WILLIAMS, JMG.; TEASDALE, JD. *Mindfulness-based cognitive therapy for depression*. Guilford; New York: 2002.
- U.S. CENSUS BUREAU. American community survey. 2008. Retrieved May 8, 2010, from http://factfinder.census.gov/home/saff/main.-html?_lang=en

TABLE 1Descriptive Statistics and Pearson's Correlations (*r*) for the Variables of Interest in Study 1 (*N* = 636)

Measures	Autonomy	Need for Control	Perfectionism	Defensive Separation	SBQ
PSI-II-Autonomy	–	.80 *	.64 *	.90 *	.27 *
Need for Control	–	–	.41 *	.53 *	.16 *
Perfectionism	–	–	–	.41 *	.29 *
Defensive Separation	–	–	–	–	.23 *
<i>M(SD)</i> for Total Sample	80.3(16.6)	26.9(6.6)	15.7(4.0)	37.9(9.9)	4.4(5.7)
<i>M(SD)</i> for Females	78.4(16.5)	26.4(6.6)	15.6(4.1)	36.4(9.5)	4.5(5.8)
<i>M(SD)</i> for Males	85.2(16.1)	28.0(6.4)	15.9(3.9)	41.4(9.8)	4.0(5.2)

Note.

PSI-II, Personal Style Inventory–Revised, Autonomy Scale; SBQ, Suicidal Behaviors Questionnaire.

* $p < .01$;

TABLE 2

Pooled Descriptive Statistics and Pearson's Correlations (*r*) for the Variables of Interest in Study 2 (*N* = 88)

Measures	PSI-II Autonomy	PSI-II Need for Control	PSI-II Perfectionism	PSI-II Defensive Separation	SBQ
Autonomy	—	.73 **	.63 **	.88 **	.09
Need for Control	—	—	.30 *	.41 **	.26 *
Perfectionism	—	—	—	.37 **	.05
Defensive Separation	—	—	—	—	.01
SBQ	—	—	—	—	—
Pooled <i>M</i> for Total Sample	72.7	23.3	11.7	37.6	5.9
Pooled <i>M</i> for Females	73.6	23.8	12.0	37.8	5.4
Pooled <i>M</i> for Males	72.8	23.1	11.7	38.0	6.4

Note.

PSI-II, Personal Style Inventory–Revised, Autonomy Scale; SBQ, Suicidal Behaviors Questionnaire.

*
 $p < .05$,**
 $p < .01$;