Future Orientation and Suicide Ideation and Attempts in Depressed Adults Ages 50 and Over

Jameson K. Hirsch, Ph.D., Paul R. Duberstein, Ph.D., Kenneth R. Conner, Psy.D., M.P.H., Marnin J. Heisel, Ph.D., Anthony Beckman, B.S., Nathan Franus, M.S., Yeates Conwell, M.D.

Objective: *The objective of this study was to test the hypothesis that future orientation is associated with lower levels of suicide ideation and lower likelihood of suicide attempt in a sample of patients in treatment for major depression.* **Methods:** *Two hundred two participants (116 female, 57%) ages 50–88 years were recruited from inpatient and outpatient settings. All were diagnosed with major depression using a structured diagnostic interview. Suicide ideation was assessed with the Scale for Suicide Ideation (both current and worst point ratings), and a measure of future orientation was created to assess future expectancies. The authors predicted that greater future orientation would be associated with less current and worst point suicide ideation, and would distinguish current and lifetime suicide attempters from nonattempters. Hypotheses were tested using multivariate logistic regression and linear regression analyses that accounted for age, gender, hopelessness, and depression.* **Results:** *As hypothesized, higher future orientation scores were associated with lower current suicidal ideation, less intense suicidal ideation at its worst point, and lower probability of a history of attempted suicide after accounting for covariates. Future orientation was not associated with current attempt status.* **Conclusions:** *Future orientation holds promise as a cognitive variable associated with decreased suicide risk; a better understanding of its putative protective role is needed. Treatments designed to enhance future orientation might decrease suicide risk.* (Am J Geriatr Psychiatry 2006; 14:752–757)

Key Words: Future orientation, optimism, suicide

Received December 22, 2005; revised January 3, 2006; accepted January 13, 2006. From the Center for the Study and Prevention of Suicide, Department of Psychiatry, University of Rochester School of Medicine and Dentistry (JKH, PRD, KRC, AB, NF, YC), Rochester, NY; Department of Psychology, Rochester Institute of Technology (JKH), Rochester, NY; Department of Psychiatry, University of Western Ontario (MJH), London, Ontario, Canada. Send correspondence and reprint requests to Dr. Jameson K. Hirsch, Department of Psychology, Rochester Institute of Technology, 18 Lomb Memorial Drive, Rochester, NY 14643. e-mail: jkhgla@rit.edu

Suicide is a significant public health problem.[1] The large majority of adults ages 50 and over who die by suicide have a diagnosable mental illness,[2] most commonly mood disorders.[3,4] Given that hopelessness and pessimism amplify risk for suicide ideation and behaviors in older adults, over and above the effects of depression,[5–7] the reduction of maladaptive cognitions is a central focus of cognitive models[8,9] and treatments.[10,11] Beck[12] proposed that distorted cognitions about the self and others, the world, and the future predispose a person to depression when confronted with negative events.

Although adaptive cognitive characteristics have received comparatively less attention, it has been posited that a positive future orientation may decrease suicide risk.[13,14] Drawing on both cognitive and self-determination theories,[12,15] our conceptualization of positive future orientation involves: 1) the ability to think about the future[16]; 2) the cultivation of a general positive outlook and mood about the future[17,18]; 3) the development of strategies to achieve carefully identified goals[19]; and, 4) the presence of reasons for living, including close intergenerational relationships.[14] Future orientation is thus a broader construct than optimism, hope, reasons for living, and other microconstructs that are now widely discussed in the developing area of inquiry called "positive psychology."[20] Cognitive theory[21] provides a basis for comprehending the role of future-oriented thoughts in suicidal behavior, and self-determination theory[15] contributes a model for positive psychological growth through orientation, self-determination, and relatedness.

Although few rigorously controlled studies have been conducted, preliminary findings suggest that adaptive cognitions are associated with reduced depressive symptoms in college students[14,22,23]; improved psychologic adjustment in patients with cancer, multiple sclerosis, and Parkinson disease[24,25]; enhanced well-being in patients with HIV and arthritis[26,27]; and decreased suicide ideation and behaviors in depressed older adults.[28]

Taken together, this suggests that individuals with a positive future orientation may have better outcomes. The role of future orientation in suicidal behavior has been insufficiently studied, however, particularly in clinical samples. The current study examined the association between future orientation and suicidal ideation and attempts in a sample of adults, aged 50 years and older, being treated for depression. We hypothesized that individuals with a more positive future orientation would have lower levels of suicide ideation and would be less likely to have attempted suicide after accounting for sociodemographic characteristics, hopelessness, and depression.

MATERIALS AND METHODS

Participants

Participants were depressed patients 50 years of age and older recruited from inpatient and outpatient services of three teaching hospitals in Rochester, New York, including a community hospital, tertiary care facility, and an academic medical center. Research coordinators approached 633 potential subjects, and 250 patients consented to participate in this study. All study participants met criteria for a major affective disorder as established by the Structured Clinical Interview for *DSM–IV* Axis I disorders (SCID-I).[29] For the analyses reported here, we excluded 48 patients with dementia, psychoses, or manic-phase bipolar disorder. One hundred seventy-two (85%) patients were diagnosed with unipolar depression, and 30 patients (15%) met criteria for bipolar disorder, most recent episode depressed. Psychiatric comorbidity was present in 119 patients (67%), including substance abuse (N = 74), anxiety (N = 30), and mood (N = 15) disorders. Of the 202 included patients, 166 (82%) were recruited from inpatient settings and 36 (18%) from outpatient settings.

Participants included 86 men (43%) and 116 women (57%). Age ranged from 50–88 years (mean age: 61.7, standard deviation [SD]: 10.6). This sample was predominantly white (94%). At the time of interview, 84 participants (42%) lived alone; 75 (37%) were married and 25 (12%) were widowed; 134 (66%) were either retired or receiving disability benefits. Mean level of education was 13.2 years (SD: 2.6).

Measures

Future Orientation. We selected the following six items from the *Reasons for Living Inventory–Older*

Adults Version (RFL-OA; Edelstein, 1999) based on their face valid representation of future orientation: 1) "Tomorrow I may feel better"; 2) "No matter how badly I feel, I know it will not last"; 3) "I believe I can learn to adjust or cope with my problems"; 4) "I have coped before and I can do it again"; 5) "I have the hope that things will improve and the future will be happier"; and, 6) "I have future plans I am looking forward to carrying out." Respondents rated each item on a Likert-scale according to how important it is in preventing them from taking their lives, from 1 (extremely unimportant) to 6 (extremely important). This six-item scale is internally consistent ($\alpha = 0.91$); the average item-total correlation is 0.75. The mean future orientation score for this sample was 26.08 (SD: 6.95) with scores ranging from 6–36.

Beck Hopelessness Scale. The Beck Hopelessness Scale (BHS)[30] assesses negative attitudes about the future through 20 true–false statements. The scale has strong internal reliability and test–retest reliability.[30] BHS scores are associated with suicide ideation in older adults[31] and death by suicide in outpatients[32] and inpatients.[33] For the current sample, the mean hopelessness score was 10.86 (SD: 6.43) ranging from 0–20.

Hamilton Rating Scale for Depression. The Hamilton Rating Scale for Depression (HRSD)[34] is a 24-item assessment of the presence and severity of current depressive symptoms and is administered through a clinical interview. The HRSD is a widely used measure of current depressive symptom severity that has adequate psychometric properties[35] and has been used extensively with inpatient[36] and outpatient samples[37] and older adults.[38] The mean HRSD score for this sample was 26.21 (SD: 7.79); scores were normally distributed and ranged from 8–45.

Scale for Suicide Ideation. The Scale for Suicide Ideation (SSI)[39] is a 19-item observer-rated measure assessing current and worst point suicide ideation, presence of a suicide plan, deterrents to suicidal behavior, preparations for a suicide attempt, and anticipation of attempting suicide. Suicidal thoughts and behaviors are assessed for the last 7 days (SSI-C) and also for the self-identified worst point in a patient's life (SSI-W). Participants were classified as current suicide ideators based on a score of one or greater on the SSI-C and were classified as having an episode of worst point suicide ideation based on a score of one or greater on the SSI-W. The SSI demonstrated strong reliability with internal consistency coefficients (Cronbach alpha) of 0.83 (SSI-C) and 0.86 (SSI-W) in the present study. The SSI is associated with risk of suicide attempt[40] and for death by suicide in outpatients.[41]

Suicide attempts were assessed through questions from the SCID and supplemental questions developed by the research team that assess the most recent suicide attempt (defined as a self-destructive act that occurred within the last 90 days) and number of lifetime suicide attempts.[42]

Statistical Analyses

Because age, gender, hopelessness, and depression are powerfully associated with suicidal thoughts and behaviors, these variables were covaried in all analyses. Education was covaried as a proxy for socioeconomic status. A multivariate linear regression analysis was conducted to test the hypothesized associations between future orientation and current suicide ideation and worst point suicide ideation respectively. SSI scores were transformed using a square root function before analyses. A multivariate logistic regression analysis was conducted to compare subjects with a history of one or more suicide attempts with nonattempters. A separate logistic regression examined whether future orientation was associated with a suicide attempt within the past 90 days. All variables were entered simultaneously in the regressions.

RESULTS

Suicide Ideation and Attempts

Seventy-eight individuals (39%) had previously attempted suicide, 51 (25%) reported current suicide ideation, and 142 (70%) reported lifetime (worst point) suicide ideation. People with higher future orientation scores had lower levels of current suicidal ideation after accounting for the effects of age, gender, hopelessness, and depression (Table 1). A similar pattern of findings emerged when subjects were dichotomized into current suicide ideators (score greater than zero on SSI-C) and nonideators (odds ratio [OR]: 0.93, 95% confidence interval [CI]:

TABLE 1. Predictors of Current and Lifetime Suicide Attempter Status and Suicide Ideation Scores: Multivariate Regression Analyses

	Current Suicide Ideation[a] [df = 6, 124]		Worst Point Suicide Ideation[a] [df = 6, 124]		Current Suicide Attempt[b] [df = 6, 131]			History of Suicide Attempts[b] [df = 6, 131]		
Predictor	**t-value**	**Unstandardized Beta (SE)**	**t-value**	**Unstandardized Beta (SE)**	**OR (95% CI)**	**Unstandardized Coefficient (SE)**	**Wald**	**OR (95% CI)**	**Unstandardized Coefficient (SE)**	**Wald**
Age	-2.12*	-0.03 (.01)	-2.34*	-0.04 (0.02)	0.97 (0.91–1.02)	-0.03 (0.03)	1.45	0.93 (0.89–0.97)***	-0.08 (0.02)	10.48
Female	0.05	0.01 (0.28)	-1.48	-0.55 (0.37)	1.14 (0.43–3.02)	0.13 (0.49)	0.07	1.33 (0.61–2.88)	0.28 (0.39)	0.50
Education	-0.35	-0.02 (0.06)	-1.76	-0.14 (0.08)	1.09 (0.88–1.37)	0.09 (0.11)	0.71	0.91 (0.78–1.07)	-0.10 (0.08)	1.46
Depression	1.86	0.04 (0.02)	0.74	0.02 (0.03)	1.04 (0.97–1.11)	0.04 (0.03)	1.23	1.02 (0.97–1.07)	0.02 (0.03)	0.42
Hopelessness	1.24	0.03 (0.03)	2.40*	0.08 (0.03)	0.98 (0.89–1.06)	-0.03 (0.05)	0.37	0.98 (0.91–1.05)	-0.02 (0.04)	0.44
Future Orientation	-3.09**	-0.06 (0.02)	-2.36*	-0.06 (0.03)	0.99 (0.93–1.06)	-0.01 (0.03)	0.09	0.94 (0.89–0.99)*	-0.06 (0.03)	4.75

[a]Linear regression.
[b]Logistic regression.
*p <0.05; **p <0.01; ***p <0.001.
SE: standard error; OR: odds ratio; CI: confidence interval.

0.87–0.98, Wald = 6.49, p <0.05). People with higher future orientation scores were less likely to report any current suicide ideation.

People with higher future orientation scores also had lower levels of worst point suicidal ideation after accounting for covariates (Table 1). Again, when subjects were dichotomized based on presence or absence of worst point suicide ideation (score greater than zero on SSI-W), positive future orientation was associated with nonideation (OR: 0.88, 95% CI: 0.79–0.98, Wald = 5.35, p <0.05).

With respect to suicide attempts, a multivariate logistic regression analysis showed that people with higher future orientation scores were less likely to have ever attempted suicide (OR: 0.94, 95% CI: 0.89–0.99; see Table 1). Future orientation was not associated with current attempter status. We also conducted analyses excluding subjects with a score lower than 16 on the HRSD, which is an accepted cutoff for clinically relevant depression[43,44]; the pattern of results remained the same (data not shown).

There were also significant main effects for age. Older participants were less likely to have attempted suicide and reported lower levels of current and worst point suicide ideation. There were no gender differences (Table 1).

DISCUSSION

The associations of hopelessness and depression with suicidal thoughts and behaviors among individuals are well established.[45,46] Even after controlling for their effects, however, positive future orientation is associated with less current and worst point suicide ideation and distinguishes between suicide attempters and nonattempters among individuals ages 50 and older in treatment for depression. Age is also a contributing factor. Consistent with previous research,[47] there were age differences in reports of suicide ideation and a history of suicide attempts in this age-restricted sample.

With respect to positive future orientation, our findings may have implications for the treatment of suicidal ideation and behavior. Just as the treatment of depression is an important and attainable clinical goal in efforts to reduce suicide ideation,[48] the promotion of adaptive characteristics may also be valuable.

Individuals who think positively about their future appear to be protected from some adverse medical and psychologic outcomes,[49,50] perhaps through the use of active adaptive strategies.[51] Tackling problems directly, striving to overcome adversity, and persevering toward accomplishment of goals are examples.[18] Establishment of meaningful and supportive interpersonal relationships that foster future orientation may also be important.[52] An individual able to engender a positive outlook toward the future, and who is encouraged to do so, may reduce their distress, thereby mitigating risk.[53,54] Such positive expectancies may be either state-like or trait-like.[55] Cognitively based therapeutic interventions have been successful in the treatment of suicidal behavior,[56,57] although none has focused specifically on enhancing future orientation. Preliminary findings suggest that teaching depressed patients to think optimistically can reduce depression in adolescents, college students, and outpatients being treated for depression.[22,58,59] Perhaps similar techniques could be used to increase future orientation in depressed older adults.

Although use of a clinical population is a strength of this study, results should be replicated among diverse community and primary care and medical samples. Our sample was predominantly white and was more highly educated than may be expected in some treatment settings (e.g., community mental health clinic). The relatively small sample of recent suicide attempters (N = 38) may have prevented us from detecting a significant association between future orientation and recent suicide attempts. Cross-sectional data preclude the ability to examine causal effects. Prospective investigation of the mechanisms by which future orientation might exert a protective effect in depressed patients is warranted, as is research on its potential detrimental effects.[60,61] Ideally, future studies will use measures designed specifically to assess future orientation. Deeper understanding of factors that influence the development and expression of suicidal thoughts and behaviors may lead to the development of better treatments.

Preparation of this manuscript was supported by United States Public Health Service grants MH-20061-01 and R01-MH-064579.

The authors appreciate the assistance of Holly Wadkins, B.A., Patrick Walsh, B.A., Madalina Chirieac, M.D., Stephanie Gamble, Ph.D., and J. David Useda, Ph.D.

References

1. The Surgeon General's Call to Action to Prevent Suicide. Washington, DC: US Public Health Service, 1999
2. Waern M, Rubenowitz E, Wilhelmson K: Predictors of suicide in the old elderly. Gerontology 2003; 49:328–334
3. Beautrais AL: A case control study of suicide and attempted suicide in older adults. Suicide Life Threat Behav 2002; 32:1–9
4. Lawrence D, Almeida OP, Hulse GK, et al: Suicide and attempted suicide among older adults in Western Australia. Psychol Med 2000; 30:813–821
5. Kuo WH, Gallo JJ, Eaton WW: Hopelessness, depression, substance disorder, and suicidality. Soc Psychiatry Psychiatr Epidemiol 2004; 39:497–501
6. Heisel MJ, Flett GL, Besser A: Cognitive functioning and geriatric suicide ideation: testing a mediational model. Am J Geriatr Psychiatry 2002; 10:428–436
7. Szanto K, Reynolds CF, Conwell Y, et al: High levels of hopelessness persist in geriatric patients with remitted depression and a history of attempted suicide. J Am Geriatr Soc 1998; 46:1401–1406
8. Dieserud G, Roysamb E, Ekeberg O, et al: Toward an integrative model of suicide attempt: a cognitive psychological approach. Suicide Life Threat Behav 2001; 31:153–168
9. Schotte D, Clum G: Problem-solving skills in suicidal psychiatric patients. J Consult Clin Psychol 1987; 55:49–54
10. Szanto K, Mulsant BH, Houck PR, et al: Treatment outcome in suicidal vs non-suicidal elderly patients. Am J Geriatr Psychiatry 2001; 9:261–268
11. Townsend E, Hawton K, Altman DG, et al: The efficacy of problem-solving treatments after deliberate self-harm: meta-analysis of randomized controlled trials with respect to depression, hopelessness and improvement in problems. Psychol Med 2001; 31:979–988
12. Beck AT: Cognition, affect, and psychopathology. Arch Gen Psychiatry 1971; 24:495–500
13. Alloy LB, Abramson LY, Whitehouse WG, et al: Depressogenic cognitive styles: predictive validity, information processing and personality characteristics, and developmental origins. Behav Res Ther 1999; 37:503–531
14. Linehan MM, Goodstein JL, Nielsen SL, et al: Reasons for staying alive when you are thinking of killing yourself—the Reasons for Living Inventory. J Consult Clin Psychol 1983; 51:276–286
15. Deci EL, Ryan RM: The 'what' and 'why' of goal pursuits: human needs and the self-determination of behavior. Psychological Inquiry 2000; 11:227–268
16. Sheehy N, O'Connor RC: Cognitive style and suicidal behaviour: implications for therapeutic intervention, research lacunae and priorities. Br J Guid Counc 2002; 30:353–362
17. Gillham J, Shatte A, Reivich K, et al: Optimism, pessimism, and explanatory style, in Chang Edward C., ed.,Optimism & Pessimism: Implications for Theory, Research, and Practice. Washington, DC, American Psychological Association, 2001, pp 53–75
18. Scheier MF, Carver CS: Effects of optimism on psychological and physical well-being: theoretical overview and empirical update. Cognit Ther Res 1992; 16:201–228

19. Snyder CR, Harris C, Anderson JR, et al: The will and the ways: development and validation of an individual-differences measure of hope. J Pers Soc Psychol 1991; 60:570–585
20. Seligman MEP, Steen TA, Park N, et al: Positive psychology progress: empirical validation of interventions. Am Psychol 2005; 60:410–421
21. Beck AT: Cognitive therapy—past, present, and future. J Consult Clin Psychol 1993; 61:194–198
22. Seligman MEP, Schulman P, DeRubeis R, et al: The prevention of depression and anxiety. Prevention & Treatment 1999; 2:1–21
23. Range LM, Penton SR: Hope, hopelessness, and suicidality in college students. Psychol Rep 1994; 75:456–458
24. Ridder D, Schreurs K, Bensing J: The relative benefits of being optimistic: optimism as a coping resource in multiple sclerosis and Parkinson's disease. Br J Health Psychol 2000; 5:141–155
25. Helgeson VS, Snyder P, Seltman H: Psychological and physical adjustment to breast cancer over 4 years: identifying distinct trajectories of change. Health Psychol 2004; 23:3–15
26. Safren SA, Radomsky AS, Otto MW, et al: Predictors of psychological well-being in a diverse sample of HIV-positive patients receiving highly active antiretroviral therapy. Psychosomatics 2002; 43:478–485
27. Downe-Wamboldt BL, Melanson PM: A causal model of coping and well-being in elderly people with arthritis. J Adv Nurs 1998; 27:1109–1116
28. Malone KM, Oquendo MA, Haas GL, et al: Protective factors against suicidal acts in major depression: reasons for living. Am J Psychiatry 2000; 157:1084–1088
29. First MB, Spitzer RL, Gibbon M, et al: Structured clinical interview for *DSM–IV* Axis I disorders–patient ed (SCID-I/P, version 2.0, 4/97 revision). New York, Biometrics Research Department, NY State Psychiatric Institute, 1997
30. Beck AT, Weissman A, Lester D, et al: The measurement of pessimism: the hopelessness scale. J Consult Clin Psychol 1974; 42:861–865
31. Heisel MJ, Flett GL, Besser A: Cognitive functioning and geriatric suicide ideation: testing a mediational model. Am J Geriatr Psychiatry 2002; 10:428–436
32. Beck AT, Brown G, Berchick RJ, et al: Relationship between hopelessness and ultimate suicide: a replication with psychiatric outpatients. Am J Psychiatry 1990; 147:190–195
33. Keller F, Wolfersdorf M: Hopelessness and the tendency to commit suicide in the course of depressive disorders. Crisis 1993; 14: 173–177
34. Hamilton M: A rating scale for depression. J Neurol Neurosurg Psychiatry 1960; 23:56–61
35. Williams JBW: Standardizing the Hamilton Depression Rating Scale: past, present, and future. Eur Arch Psychiatry Clin Neurosci 2001; 251 Suppl 2:II6–12
36. Lyness JM, Caine ED, Conwell Y, et al: Depressive symptoms, medical illness, and functional status in depressed psychiatric inpatients. Am J Psychiatry 1993; 150:910–915
37. Steer R, Beck A, Riskind J, et al: Relationships between the Beck Depression Inventory and the Hamilton Psychiatric Rating Scale for Depression in depressed outpatients. J Psychopathol Behav Assess 1987; 9:327–339
38. Moberg PJ, Lazarus LW, Mesholam RI, et al: Comparison of the standard and structured interview guide for the Hamilton Depression Rating Scale in depressed geriatric inpatients. Am J Geriatr Psychiatry 2001; 9:35–40
39. Beck AT, Kovacs M, Weissman A: Assessment of suicidal intention: Scale for Suicide Ideation. J Consult Clin Psychol 1979; 47: 343–352
40. Beck AT, Brown GK, Steer RA: Psychometric characteristics of the Scale for Suicide Ideation with psychiatric outpatients. Behav Res Ther 1997; 35:1039–1046
41. Brown GK, Beck AT, Steer RA, et al: Risk factors for suicide in psychiatric outpatients: a 20-year prospective study. J Consult Clin Psychol 2000; 68:371–377
42. Duberstein PR, Conwell Y, Seidlitz L, et al: Personality traits and suicidal behavior and ideation in depressed inpatients 50 years of age and older. J Gerontol B Psychol Sci Soc Sci 2000; 55:18–26
43. Hirschfeld RMA, Dunner DL, Keitner G, et al: Does psychosocial functioning improve independent of depressive symptoms? A comparison of nefazodone, psychotherapy, and their combination. Biol Psychiatry 2002; 51:123–133
44. McCullough Jr, JP Klein Jr, DN Keller MB, et al: Comparison of DSM–III–R chronic major depression and major depression superimposed on dysthymia (double depression): validity of the distinction. J Abnorm Psychol 2000; 109:419–427
45. Beck AT, Steer RA, Kovacs M, et al: Hopelessness and eventual suicide: a 10-year prospective study of patients hospitalized with suicidal ideation. Am J Psychiatry 1985; 142:559–563
46. Rifai AH, George CJ, Stack JA, et al: Hopelessnaess in suicide attempters after acute treatment of major depression in late life. Am J Psychiatry 1994; 151:1687–1690
47. Duberstein PR, Conwell Y, Seidlitz L, et al: Age and suicidal ideation in older depressed inpatients. Am J Geriatr Psychiatry 1999; 7:289–296
48. Bruce ML, Ten Have TR, Reynolds CF, et al: Reducing suicidal ideation and depressive symptoms in depressed older primary care patients—a randomized controlled trial. JAMA 2004; 291: 1081–1091
49. Achat H, Kawachi I, Spiro A, et al: Optimism and depression as predictors of physical and mental health functioning: the normative aging study. Ann Behav Med 2000; 22:127–130
50. Allison PJ, Guichard C, Gilain L: A prospective investigation of dispositional optimism as a predictor of health-related quality of life in head and neck cancer patients. Qual Life Res 2000; 9:951–960
51. Miller DL, Manne SL, Taylor K, et al: Psychological distress and well-being in advanced cancer: the effects of optimism and coping. J Clin Psychol 1996; 3:115–130
52. Brissette I, Scheier MF, Carver CS: The role of optimism in social network development, coping, and psychological adjustment during a life transition. J Pers Soc Psychol 2002; 82:102–111
53. Hawkins MT, Miller RJ: Cognitive vulnerability and resilience to depressed mood. Aust J Psychol 2003; 55:176–183
54. Vaillant GE: Mental health. Am J Psychiatry 2003; 160:1373– 1384
55. Shifren K, Hooker K: Stability and change in optimism: a study among spouse caregivers. Exp Aging Res 1995; 21:59–76
56. Rittner B, Smyth NJ, Wodarski JS: Assessment and crisis-intervention strategies with suicidal adolescents. Crisis Intervention and Time-Limited Treatment 1995; 2:71–84
57. Rudd D, Joiner T, Rajab H: Treating Suicidal Behavior: An Effective, Time-Limited Approach. New York, NY, Guilford, 2001
58. Barber JP, DeRubeis RJ: Change in compensatory skills in cognitive therapy for depression. J Psychother Pract Res 2001; 10:8–13
59. Gillham J, Reivich K: Cultivating optimism in childhood and adolescence. Ann Am Acad Pol Soc Sci 2004; 591:146–163
60. Segerstrom SC: Optimism and immunity: do positive thoughts always lead to positive effects? Brain Behav Immun 2005; 19: 195–200
61. Segerstrom SC: Optimism, goal conflict, and stressor-related immune change. J Behav Med 2001; 24:441–467