

RESEARCH ARTICLE

'Wish to die' is independently associated with cardiovascular mortality in later life. Data from TILDA

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Abstract

Background: There is an established bidirectional relationship between mental and heart health in later life but the link between wish to die (WTD) and cardiovascular mortality is less well-defined.

Methods: This is a longitudinal study examining the association between WTD and mortality over 9-year follow-up in a large population-representative sample of older adults. Individual-level survey data was linked to official death registration data, divided into cardiovascular and noncardiovascular causes. WTD was defined as answering affirmatively when asked 'In the last month, have you felt that you would rather be dead?' Regression models were used to obtain hazard ratios for the association between WTD at Wave 1 and mortality. Kaplan-Meier plots were used to compare survival across groups.

Results: Just over 3% (275/8124) of participants reported WTD. Mortality data was available for 9% of participants (755/8124). WTD was significantly associated with all-cause mortality, with a hazard ratio of 1.41 (95% confidence interval [CI]: 1.00–1.99). Findings were attenuated and no longer significant after excluding participants with heart disease or depression/anxiety/other psychiatric illness. WTD was significantly associated with cardiovascular mortality (hazard ratio: 2.14 [95% CI: 1.21–3.78]), even after excluding participants with depression/anxiety/other illnesses but not heart disease. WTD was not associated with an increased risk of death due to non-cardiovascular causes.

Conclusions: Older people who report a wish to die have double the risk of death from cardiovascular disease in the following 9 years, even when those with depression, anxiety or other mental health problems are excluded.

KEYWORDS

cardiovascular, death ideation, depression, mortality

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Key points

- Just over 3% of people aged ≥ 50 years reported a wish to die (WTD), endorsing that during the last month they have had thoughts that they would rather be dead.
- WTD was significantly associated with cardiovascular mortality during 9-year follow-up with a hazard ratio 2.14 (95% CI 1.21–3.78) in fully adjusted models.
- This association remained robust even after excluding participants with depression/anxiety/other psychiatric co-morbidities but was no longer significant when participants with heart disease at baseline were excluded.
- WTD was not associated with an increased risk of death due to non-cardiovascular causes.

1 | INTRODUCTION

Wish to die (WTD), also known as passive death ideation or death wish involves thoughts of one's own death, that one would be better off dead, or wishing for one's death.¹ WTD is distinct from active suicidal ideation (SI) in that it does not necessarily involve thoughts of or plans for taking one's own life.²

While later life is generally characterised by emotional well-being and contentment,³ a significant minority of older people report WTD. Over 12% of a European cohort of almost 6500 older people with a mean age of 80 years reported current WTD⁴ and rates of WTD are higher in selected groups, such as those availing of ageing services⁵ or with heart disease.⁶

While most older people reporting WTD also have coexisting mental illness, particularly depression and anxiety, this is not always the case^{7–9} and the association between WTD and death by suicide in later life is unclear.¹⁰ While recent work has suggested that WTD may be an important marker of all-cause mortality risk in later life,¹¹ there is little robust longitudinal data examining this relationship.

Cardiovascular disease remains the commonest cause of death in older people¹² and there is an established bidirectional relationship between mental and heart health in later life.¹³ Studies in younger populations have also demonstrated important associations between SI and heart disease,^{14,15} as well as cardiovascular mortality.^{16,17} The relationship between WTD and cardiovascular mortality is less well-defined however.

The aim of this study therefore is to examine the impact of WTD on all-cause mortality in a large population-based sample of older adults, adjusting for important factors such as cardiovascular disease, mental health and other chronic diseases. Furthermore, we will examine the impact of WTD specifically on cardiovascular mortality in those with and without prior heart disease. Our hypothesis, given the well-established links between heart disease and mental health, was that WTD would be significantly associated with cardiovascular mortality.

2 | METHODS**2.1 | Study design**

This is a longitudinal study examining the association between WTD and subsequent mortality over 9-year follow-up in a large population-

representative sample of older adults. Individual-level survey data was linked to official death registration data.

The TILDA study design has been outlined previously.¹⁸ Briefly, participants were interviewed at 2-yearly intervals (Waves 1–5). There were three components to data collection: a computer-assisted personal interview carried out by social interviewers in the participants' own home; a self-completion questionnaire completed and returned by the participant; and a comprehensive centre-based health assessment or a modified home-based health assessment carried out by trained research nurses. We analysed data from Waves 1 to 5, collected between 2009 and 2018.

Participants were included in this study if they were aged 50 years or older at Wave 1, and underwent assessment for WTD. Participants were excluded from participation at Wave 1 if they had a pre-existing diagnosis of dementia.

2.2 | Wish to die

At Wave 1, participants were asked: 'In the last month, have you felt that you would rather be dead?'

Participants who answered affirmatively were defined as having WTD.

2.3 | Mental health

Participants were also asked specifically about a prior diagnosis of depression, anxiety disorder or other psychological/mental illness (psychosis, bipolar affective disorder, schizophrenia).

Participants were also screened for depressive symptoms using the Centre for Epidemiological Studies Depression Scale (CES-D)¹⁹ and for anxiety symptoms using the Hospital Anxiety and Depression Scale (HADS).²⁰ A CES-D Score ≥ 16 defined clinically significant depressive symptoms,¹⁹ while a HADS-A Score >10 and >14 defined moderate and severe anxiety symptoms, respectively.²⁰

When adjusting for depression we used a combination of either a prior doctor's diagnosis and/or meeting criteria for clinically significant symptoms on the CES-D. Similarly, for anxiety we used a combination of a prior doctor's diagnosis of anxiety disorder and/or meeting criteria for moderate to severe anxiety symptoms on the HADS.

2.4 | Mortality

In order to compile mortality data, death records were obtained for TILDA participants and linked to individual level survey data from the study.²¹

Every death in the Republic of Ireland is registered with the General Register Office (GRO), and TILDA was granted approval from the GRO to link respondents to their corresponding death certificate information. The underlying cause of death was operationalised according to WHO definition as 'the disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury'.²²

Death records were available for 775 participants after exclusion criteria were applied and represented a mortality rate of 9% over 9-year follow-up. Average age at death was 75 years.

2.5 | Covariates

Further detailed social and biological data were also collected at Wave 1.

Educational attainment and smoking history were obtained by self-report. The CAGE alcohol scale was used to assess for excess alcohol intake. Cardiovascular disease was defined as self-report of angina, congestive cardiac failure or prior myocardial infarction.

TABLE 1 Baseline characteristics of study sample by wish to die

	WTD (n = 275)	No WTD (n = 7849)	
Age (years), mean (95% CI)	62.3 (61.1–63.4)	63.9 (63.6–64.1)	$t = 2.66; p = 0.0078$
Female, % (n)	60 (165/275)	54 (4229/7849)	$\chi^2 = 4.01; p = 0.045$
Educational attainment, % (n)			
Primary	43 (117/275)	30 (2365/7849)	
Secondary	34 (94/275)	40 (3156/7849)	
Tertiary	23 (64/275)	30 (2328/7849)	$\chi^2 = 19.50; p < 0.001$
CAGE alcohol scale, % (n)			
CAGE < 2	58 (159/275)	73 (5754/7849)	
CAGE ≥ 2	20 (54/275)	10 (757/7849)	
Did not answer	23 (62/275)	17 (1338/7849)	$\chi^2 = 39.99; p < 0.001$
Smoking status, % (n)			
Never smoked	33 (91/275)	44 (3456/7849)	
Past smoker	34 (95/275)	38 (3007/7849)	
Current smoker	32 (89/275)	18 (1386/7849)	$\chi^2 = 39.91; p < 0.001$
Cardiac disease, % (n) ^a	21 (58/275)	14 (1074/7849)	$\chi^2 = 12.16; p < 0.001$
Number of chronic diseases, % (n) ^b			
0	35 (97/275)	48 (3755/7849)	
1	22 (60/275)	29 (2248/7849)	
2–3	34 (93/275)	20 (1591/7849)	
≥4	9 (25/275)	3 (255/7849)	$\chi^2 = 63.04; p < 0.001$
Depression, % (n) ^c	62 (170/275)	11 (860/7849)	$\chi^2 = 620.82; p < 0.001$
Anxiety, % (n) ^d	40 (110/275)	10 (755/7849)	$\chi^2 = 257.77; p < 0.001$
Other psychiatric diagnosis, % (n) ^e	3 (8/275)	0 (37/7849)	$\chi^2 = 28.67; p < 0.001$

Note: WTD defined as answering affirmatively when asked: 'In the last month, have you felt that you would rather be dead?'

Abbreviations: CES-D, Centre for Epidemiological Studies Depression Scale; CI, confidence interval; HADS, Hospital Anxiety and Depression Scale; WTD, wish to die.

^aDefined as self-report of angina, congestive cardiac failure or prior myocardial infarction.

^bBased on the number of the following chronic diseases: eye disease (cataracts, glaucoma or age-related macular degeneration), lung disease, cancer, osteoporosis, liver disease, arthritis, urinary incontinence, Parkinson's disease and diabetes.

^cDepression defined as prior doctor's diagnosis of depression and/or meeting criteria for clinically significant symptoms on CES-D (Score ≥ 16).

^dAnxiety defined as prior doctor's diagnosis of anxiety disorder and/or meeting criteria for moderate to severe symptoms on the HADS-A (Score > 10).

^ePrior doctor's diagnosis of bipolar affective disorder, schizophrenia or psychosis.

Self-report was also elicited for the following chronic diseases: eye disease (cataracts, glaucoma or age-related macular degeneration), lung disease, cancer, osteoporosis, liver disease, arthritis, urinary incontinence, Parkinson's disease and diabetes.

2.6 | Statistical analysis

Data were analysed using Stata (StataCorp).

Baseline characteristics of the study sample were presented descriptively by WTD.

Regression models were used to obtain hazard ratios with 95% confidence intervals (CIs) for the association between WTD at Wave 1 and mortality during 9-year follow-up. Covariates were identified a priori based on their likelihood of modifying the relationship between WTD and mortality. Model was unadjusted; Model 2 was adjusted for age, sex, educational attainment, alcohol excess and smoking history; Model 3 was adjusted for Model 2 covariates, as well as chronic disease burden, depression, anxiety and other psychiatric diagnoses (psychosis, bipolar affective disorder, schizophrenia); Model 4 was adjusted for Model 3 covariates but excluded participants with cardiovascular disease; Model 5 was adjusted for Model 3 covariates but excluded participants with depression, anxiety or another psychiatric diagnosis (psychosis, bipolar affective disorder, schizophrenia).

Competing-risks regression was used for the analysis of cause of death where no-cardiovascular death was identified as the competing risk for the analysis of cardiovascular death and vice versa.

Kaplan–Meier plots were used to compare survival in those with WTD compared to those who did not report WTD. Data were right-censored at the end of the follow-up period (March 2018).

2.7 | Ethics

The TILDA study was approved by the Faculty of Health Sciences Research Ethics Committee at Trinity College Dublin and all participants gave informed written consent. All experimental procedures adhered to the Declaration of Helsinki.

3 | RESULTS

At Wave 1, 8388 participants aged ≥ 50 years were included. Of these, 264 participants had missing data (236 did not answer the question on WTD, while a further 28 had other missing data points) and were therefore excluded from the study, yielding a final study sample of 8124 participants.

Just over 3% (275/8124) of participants reported WTD within the last month. Baseline characteristics of the study sample by WTD are shown in Table 1. Participants reporting WTD were more likely to be female, have lower educational attainment and higher rates of alcohol misuse. They were also more likely to be smokers, have a history of heart disease and a higher burden of other chronic medical

illnesses. Rates of depression and anxiety were five times higher in the WTD group.

Mortality data was available for 9% of participants (755/8124). One third of deaths (249/755) were defined as death due to cardiovascular causes.

Figure 1 shows survival curves for participants with WTD over 9-year follow-up compared to those who do not report WTD, demonstrating significantly shorter time to death from any cause and death specifically from cardiovascular causes in participants with WTD.



FIGURE 1 Kaplan–Meier survival curves by wish to die at Wave 1. WTD defined as answering affirmatively when asked: ‘In the last month, have you felt that you would rather be dead?’. $N = 8124$ (for WTD, $n = 275$). Follow-up: 9 years. WTD, wish to die [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1002/gps.5550)]

TABLE 2 Hazard ratios with 95% confidence intervals for association between wish to die and mortality

	Model 1	Model 2	Model 3	Model 4	Model 5
Mortality	HR = 1.70 (1.24–2.34) $z = 3.30$ $p = 0.001$	HR = 1.69 (1.23–2.33) $z = 3.22$ $p = 0.001$	HR = 1.41 (1.00–1.99) $z = 1.99$ $p = 0.047$	HR = 1.45 (0.94–2.23) $z = 1.68$ $p = 0.094$	HR = 1.41 (0.81–2.46) $z = 1.23$ $p = 0.219$
CV mortality	HR = 2.11 (1.31–3.41) $z = 3.07$ $p = 0.002$	HR = 2.22 (1.36–3.60) $z = 3.21$ $p = 0.001$	HR = 2.14 (1.21–3.78) $z = 2.61$ $p = 0.009$	HR = 2.22 (0.99–4.99) $z = 0.53$ $p = 0.053$	HR = 2.93 (1.42–6.05) $z = 2.90$ $p = 0.004$
Non-CV mortality	HR = 1.46 (0.95–2.24) $z = 2.77$ $p = 0.088$	HR = 1.30 (0.85–2.01) $z = 1.20$ $p = 0.231$	HR = 1.03 (0.66–1.61) $z = 0.11$ $p = 0.908$	HR = 1.06 (0.60–1.85) $z = 0.20$ $p = 0.844$	HR = 0.70 (0.29–1.65) $z = -0.82$ $p = 0.412$

Note: $n = 8124$ for Models 1–3; $n = 6992$ for Model 4; $n = 7475$ for Model 5. Competing risk regression used for analysis of CV and non-CV mortality. Model 1 is unadjusted. Model 2 is adjusted for age, sex, educational attainment, alcohol excess and smoking history. Model 3 adjusts for Model 2 covariates, as well as chronic disease burden, history of depression, anxiety and other psychiatric diagnoses (psychosis, bipolar affective disorder, schizophrenia). Model 4 adjusts for Model 3 covariates but excludes participants with cardiovascular disease. Model 5 adjusts for Model 3 covariates but excludes participants with a history of depression, anxiety or other psychiatric diagnosis.

Abbreviations: CV, cardiovascular; HR, hazard ratio.

Table 2 shows data from regression models estimating the hazard ratios for mortality related to WTD. WTD was significantly associated with overall mortality in fully adjusted models with a hazard ratio of 1.41 (95% CI: 1.00–1.99). After exclusion of participants with a history of cardiovascular disease ($n = 1132$) or depression, anxiety or other psychiatric illness ($n = 649$) however, this association was attenuated and no longer statistically significant.

In fully adjusted models, WTD was significantly associated with cardiovascular mortality, with a hazard ratio of 2.14 (95% CI: 1.21–3.79). Findings remained robust after excluding participants with a history of depression, anxiety or other psychiatric illness. However, when participants with a history of cardiovascular disease were excluded, findings were attenuated and no longer significant.

WTD was not associated with an increased risk of death due to noncardiovascular causes.

4 | DISCUSSION

This study demonstrates that over 3% of older people report WTD, endorsing that during the last month they have had thoughts that they would rather be dead. Participants with WTD had a 4–5-fold increased likelihood of coexisting depression and anxiety, based on a prior doctor's diagnosis and/or meeting criteria for depression/anxiety on validated scales. In line with prior studies, WTD was also associated with higher burden of chronic medical illness and alcohol misuse.^{23,24}

After adjusting for covariates, WTD at baseline was associated with a greater than 40% absolute higher likelihood of all-cause mortality at 9-year follow-up. When participants with coexisting cardiovascular disease or psychiatric illnesses were excluded, this independent association was no longer significant. When examined by cause of death, however, WTD was associated with more than double the likelihood of mortality specifically due to cardiovascular disease independently, including when participants with a psychiatric illness were excluded from the analyses. WTD was no longer associated with cardiovascular mortality when participants with a history of heart disease were excluded however. WTD was not associated with noncardiovascular mortality.

A prior study involving a cohort of community-dwelling older people from Australia demonstrated increased risk of death, specifically death due to cardiovascular disease, in participants with SI but did not analyse those reporting WTD.²⁵ WTD has been shown to increase the risk of 5-year mortality in a cohort of older people attending primary care, however, analysis was adjusted for baseline disability, smoking status and Hamilton Depression Score only and did not examine cases by cause of death.²⁶

WTD in later life is more prevalent in those with heart disease,²⁷ and older adults with a history of myocardial infarction are three times more likely to endorse WTD.²⁸ Death by suicide also correlates strongly with ischaemic heart disease²⁹ and incident cardiovascular disease modifies the risk of all-cause mortality in older people with depressive symptoms.³⁰ To our knowledge this is the first study to specifically examine the association between WTD and cardiovascular mortality in later life however.

The mechanism for the association between WTD and cardiovascular mortality is uncertain. The association was only significant once participants with a history of heart disease were included in the model. More risky health behaviours, such as cigarette smoking or non-compliance with prescribed medication, in people with WTD could potentially increase risk of cardiovascular mortality, especially in those with established heart disease and there is emerging evidence that other negative psychological states, such as a sense of hopelessness, also increase the risk of adverse cardiovascular events.³¹ The link between heart disease and psychological stress is also well-recognised, with suggested biological mechanisms including accelerated hypertension,³² dysregulation of inflammatory pathways³³ or neuroendocrine abnormalities.³⁴ This study provides further evidence for the complex relationship between heart and brain in later life.

There are some limitations to this study which should be noted. WTD was assessed by asking only regarding the last month so excludes people who have had WTD outside this timeframe. While validated scales are used to assess depression and anxiety, in addition to a prior doctor's diagnosis, history of other psychiatric illnesses is based on a prior diagnosis only so may exclude those with undiagnosed conditions. The strengths of the study include the large population-representative sample and robust 9-year mortality data.

In conclusion, this study shows that older people who report WTD within the last month have a significantly higher likelihood of death from all causes and specifically cardiovascular disease during the next 9 years. This association with cardiovascular mortality remained robust after excluding those with a history of depression, anxiety and/or other psychiatric disorders. Further work examining biological mechanisms underpinning this association would be welcome.

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CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

The TILDA study was approved by the Faculty of Health Sciences Research Ethics Committee at Trinity College Dublin and all respondents gave informed written consent. All experimental procedures adhered to the Declaration of Helsinki.

DATA AVAILABILITY STATEMENT

TILDA's publicly accessible dataset files are hosted by the Irish Social Science Data Archive based in University College Dublin, and the Interuniversity Consortium for Political and Social Research (ICPSR) based in the University of Michigan. Please see www.TILDA.ie for information on how to access data.

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REFERENCES

1. Silverman MM, Berman AL, Sanddal ND, O'carroll PW, Joiner TE. Rebuilding the tower of Babel: a revised nomenclature for the study of suicide and suicidal behaviors. Part 2: suicide-related ideations, communications, and behaviors. *Suicide Life Threat Behav.* 2007; 37(3):264-277.
2. Szanto K, Reynolds CF, 3rd, Frank E, et al. Suicide in elderly depressed patients: is active vs. passive suicidal ideation a clinically valid distinction? *Am J Geriatr Psychiatry.* 1996;4(3):197-207.
3. Mather M. The emotion paradox in the aging brain. *Ann N Y Acad Sci.* 2012;1251(1):33-49.
4. Stolz E, Fux B, Mayerl H, Rásky É, Freidl W. Passive suicide ideation among older adults in Europe: a multilevel regression analysis of individual and societal determinants in 12 countries (SHARE). *J Gerontol B Psychol Sci Soc Sci.* 2016;71(5):947-958.
5. O'Riley AA, Van Orden KA, He H, Richardson TM, Podgorski C, Conwell Y. Suicide and death ideation in older adults obtaining aging services. *Am J Geriatr Psychiatry.* 2014;22(6):614-622.
6. Kim YA, Bogner HR, Brown GK, Gallo JJ. Chronic medical conditions and wishes to die among older primary care patients. *Int J Psychiatry Med.* 2006;36(2):183-198.
7. Forsell Y. Death wishes in the very elderly: data from a 3-year follow-up study. *Acta Psychiatr Scand.* 2000;102(2):135-138.
8. Barnow S, Linden M, Freyberger H-J. The relation between suicidal feelings and mental disorders in the elderly: results from the Berlin Aging Study (BASE). *Psychol Med.* 2004;34(4):741-746.
9. Rurup ML, Deeg DJH, Poppelaars JL, Kerkhof AJFM, Onwuteaka-Philipsen BD. Wishes to die in older people. *Crisis.* 2011;32(4):194-203.
10. Van Orden KA, O'Riley AA, Simning A, Podgorski C, Richardson TM, Conwell Y. Passive suicide ideation: an indicator of risk among older adults seeking aging services? *Gerontologist.* 2015;55(6):972-980.
11. Batterham PJ, Calear AL, Mackinnon AJ, Christensen H. The association between suicidal ideation and increased mortality from natural causes. *J Affect Disord.* 2013;150(3):855-860.
12. Tinetti ME, McAvay GJ, Murphy TE, Gross CP, Lin H, Allore HG. Contribution of individual diseases to death in older adults with multiple diseases. *J Am Geriatr Soc.* 2012;60(8):1448-1456.
13. Taylor WD, Aizenstein HJ, Alexopoulos GS. The vascular depression hypothesis: mechanisms linking vascular disease with depression. *Mol Psychiatry.* 2013;18(9):963-974.
14. Moazzami K, Dolmatova EV, Feurdean M. Suicidal ideation among adults with cardiovascular disease: the National Health and Nutrition Examination Survey. *Gen Hosp Psychiatry.* 2018;51:5-9.
15. Daray FM, Goldmann E, Gutierrez L, et al. Suicidal ideation is associated with cardiovascular disease in a large, urban cohort of adults in the Southern Cone of Latin America. *Gen Hosp Psychiatry.* 2019;57:34-40.
16. Shah AJ, Veledar E, Hong Y, Bremner JD, Vaccarino V. Depression and history of attempted suicide as risk factors for heart disease mortality in young individuals. *Arch Gen Psychiatry.* 2011;68(11):1135-1142.
17. Jee SH, Kivimaki M, Kang H-C, Park IS, Samet JM, Batty GD. Cardiovascular disease risk factors in relation to suicide mortality in Asia: prospective cohort study of over one million Korean men and women. *Eur Heart J.* 2011;32(22):2773-2780.
18. Donoghue OA, McGarrigle CA, Foley M, Fagan A, Meaney J, Kenny RA. Cohort profile update: The Irish Longitudinal Study on Ageing (TILDA). *Int J Epidemiol.* 2018;47(5):1398-1398l.
19. Radloff LS. The CES-D Scale. *Appl Psychol Meas.* 1977;1:385-401.
20. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. *Acta Psychiatr Scand.* 1983;67(6):361-370.
21. Ward M, May P, Briggs R, et al. Linking death registration and survey data: procedures and cohort profile for the Irish Longitudinal Study on Ageing (TILDA). *HRB Open Res.* 2020;3:43.

22. United Nations. *Handbook of Vital Statistics Systems and Methods*. Vol 1. Glossary: Legal, Organizational and Technical Aspects, United Nations Studies in Methods; 1991.
23. Raue PJ, Morales KH, Post EP, Bogner HR, Have TT, Bruce ML. The wish to die and 5-year mortality in elderly primary care patients. *Am J Geriatr Psychiatry*. 2010;18(4):341-350.
24. Lutz J, Morton K, Turiano NA, Fiske A. Health conditions and passive suicidal ideation in the survey of health, ageing, and retirement in Europe. *J Gerontol B Psychol Sci Soc Sci*. 2016;71(5):936-946.
25. Placido A, Sposito AC. Association between suicide and cardiovascular disease: time series of 27 years. *Int J Cardiol*. 2009;135(2):261-262.
26. Péquignot R, Dufouil C, Pérès K, Artero S, Tzourio C, Empana JP. Depression increases the risk of death independently from vascular events in elderly individuals: the three-city study. *J Am Geriatr Soc*. 2019;67(3):546-552.
27. Kubzansky LD, Davidson KW, Rozanski A. The clinical impact of negative psychological states: expanding the spectrum of risk for coronary artery disease. *Psychosom Med*. 2005;67(suppl 1):S10-S14.
28. Spruill TM. Chronic psychosocial stress and hypertension. *Curr Hypertens Rep*. 2010;12(1):10-16.
29. Black PH, Garbutt LD. Stress, inflammation and cardiovascular disease. *J Psychosom Res*. 2002;52(1):1-23.
30. Gaffey AE, Bergeman CS, Clark LA, Wirth MM. Aging and the HPA axis: stress and resilience in older adults. *Neurosci Biobehav Rev*. 2016;68:928-945.

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