

It is illegal to post this copyrighted PDF on any website.

Suicide and the Elderly During the COVID-19 Pandemic: An Overview of Different Suicide Theories

Hsueh-Cho Chou, MD^a; Dong-Sheng Tzeng, PhD^{a,b,c}; and Shang-Lun Lin, MS^{d,e,f,*}

ABSTRACT

Objective: To expand knowledge during the coronavirus disease 2019 (COVID-19) pandemic with regard to suicide prevention among the elderly population by providing recommendations for interview strategies using 3 suicide theories.

Methods: Two hypothetical geriatric suicide cases (1 low lethality and 1 high lethality) are presented and categorized according to 3 suicide theories: interpersonal theory of suicide, three-step theory of suicide, and hopelessness theory of depression.

Results: In crisis intervention, the clinician's interview must match the intrinsic belief of the suicide attempter to enable engagement and rapport. Use of different aspects of the 3 suicide theories can be useful but are dependent on the emergent nature of the attempt.

Conclusion: The need for identification and treatment of those with mental health issues, especially among the elderly population, and collaborative multidisciplinary management teams is increasing during the current global pandemic. Specific interview strategies are needed when engaging with elderly suicidal patients. Suicide prevention in elderly patients is worthy of strong public attention.

Prim Care Companion CNS Disord 2020;22(5):20nr02676

To cite: Chou HC, Tzeng DS, Lin SL. Suicide and the elderly during the COVID-19 pandemic: an overview of different suicide theories. *Prim Care Companion CNS Disord*. 2020;22(5):20nr02676.

To share: <https://doi.org/10.4088/PCC.20nr02676>
© Copyright 2020 Physicians Postgraduate Press, Inc.

^aDepartment of Psychiatry, Kaohsiung Armed Forces General Hospital, Kaohsiung City, Taiwan

^bInstitute of Undersea and Hyperbaric Medicine, National Defense Medical Center, Taipei, Taiwan

^cCollege of Pharmacy and Biotechnology, Tajen University, Pingtung, Taiwan

^dGraduate Institute of Medical Science, College of Health Science, Chang Jung Christian University, Tainan, Taiwan

^eDepartment of Psychiatry, Kaohsiung Armed Forces, General Hospital Pingtung Branch, Pingtung, Taiwan

^fDepartment of Electrical Engineering, I-Shou University, Kaohsiung City, Taiwan

*Corresponding author: Shang-Lun Lin, MS, No.2, Zhongzheng 1st Rd, Lingya Dist, Kaohsiung City 80284, Taiwan (chyi4977@gmail.com).

Imagine a possible scene during the coronavirus disease 2019 (COVID-19) crisis. When a young man goes home experiencing extreme fatigue, his elderly father, who suspected his son to have COVID-19, cut his radial artery. With the exception of attempting to stop the bleeding, what else could his son have done in that moment? What conversation could be used to quickly build a rapport to relieve the man's mental anguish, stop the suicide attempt, and prevent the recurrence of suicide? This scene indicates 3 challenges with regard to suicide prevention in the geriatric population during the COVID-19 pandemic. First, in most countries, adults over age 65 years have the highest suicide rate.¹ In the United States, the annual suicide death rate of senior citizens is >27 per 100,000 in men and >4 per 100,000 in women.² Second, many individuals have underlying psychiatric disorders but may not seek help. A psychological autopsy revealed that 95% of suicide victims had a psychiatric disorder; however, 87% had not sought mental health treatment.³ Third, physicians may find it difficult to convey all the verbal and nonverbal messages, including the tenets of empathy, partnership, respect, support, legitimization, and compassion, to an elderly patient who has attempted suicide.⁴ Also, emergent psychiatric consultation is not always available in all medical institutions.

Although it is impossible to identify all individuals who may attempt suicide, it is important to understand factors that may increase the likelihood, especially during the COVID-19 crisis. Therefore, in this article, we demonstrate the possible intrinsic beliefs associated with 2 geriatric suicide cases and provide recommended interview techniques according to 3 main suicide theories. Given the limited government budgets for mental health services, the aim of this article is to quickly expand knowledge with regard to suicide prevention during the COVID-19 pandemic, especially among the elderly population.

METHODS

Three main suicide theories were applied in this analysis: interpersonal theory of suicide (IPT),⁵ three-step theory of suicide (TST),⁶ and hopelessness theory of depression (HTD),⁷ given that they are widely cited, concise, and practical⁸ to convert into interview sentences. Two hypothetical geriatric suicide cases (case 1 as an example of low lethality, case 2 as an example of high lethality) are presented to illustrate use of the 3 theories. The 2 cases were categorized using the 3 suicide theories by the possible intrinsic beliefs of the individuals, recommended interview questions for clinicians, and advice for management. An explanation of the 3 suicide theories used in this analysis is as follows.

Interpersonal Theory of Suicide

IPT (Figure 1) states that the combination of thwarted belongingness and perceived burdensomeness induces suicidal ideation. When

Clinical Points

- Specific suicide prevention interview strategies may improve patient health care, promote willingness to seek mental health resources, and prevent the stigma effect.
- The need for identification and treatment of those with mental health issues, especially among the elderly population, and collaborative multidiscipline management teams is increasing during the COVID-19 pandemic.

suicidal ideation becomes stable and unchanging, active suicidality emerges. The simultaneous existence of the capability for suicide and strong suicidal desire provokes suicide attempts. The main variables of the capability for suicide include pain tolerance and ability to overcome the fear of death.

Three-Step Theory of Suicide

In the first step of TST, the presence of pain and hopelessness induces suicidal ideation (Figure 2). In the second step, the suicidal ideation will increase if there is a lack of sufficient connectedness. Adequate connectedness includes sufficient belongingness and “lack of burdensomeness” (ie, any sense of meaning or purpose for living or valued roles). In the third step, an individual with active suicidal ideation and the capacity for suicide will attempt suicide. The capability for suicide originates from a sense of fearlessness toward death, tolerance of physical pain, and practice of actions or plans.

Hopelessness Theory of Depression

HTD (Figure 3) indicates that childhood maltreatment produces negative inferential styles, which cause people to negatively self-blame and view any challenges or difficulties as global and stable derivations of negative results. Negative inferential styles accelerate one's view of adverse life events with a hopeless status. Hopelessness situations induce hopelessness depression plus suicidal ideation and attempts. Reciprocally speaking, positive inferential styles indicate that events are incidental and transitional derivations of proper endings or blessings.

RESULTS

Elderly COVID-19 patients often have comorbidities such as type 2 diabetes mellitus, cardiovascular disease, and pulmonary illness, which increase mortality risk.⁹ Hence, COVID-19 often precipitates preexisting burdensomeness. Geriatric individuals' lower fear of death compared to younger patients makes suicide prevention more difficult in the elderly population.

Consideration of suicide-related variables in the firstline interview is an ideal way to investigate potential for suicide with adequate validity and reliability. However, such an interview will be too lengthy for non-mental health clinicians to carry out if too many suicide theory variables

Figure 1. Interpersonal Theory of Suicide

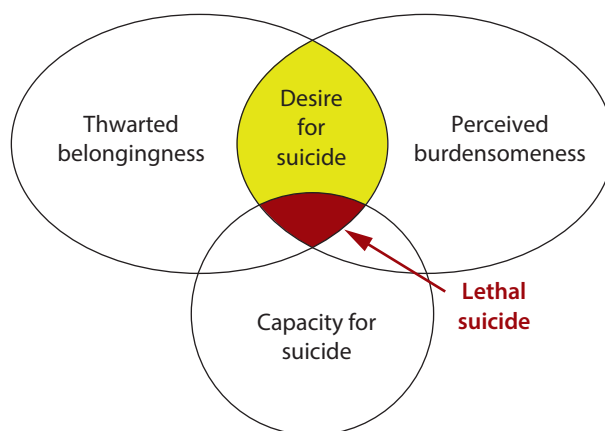


Figure 2. Three-Step Theory of Suicide

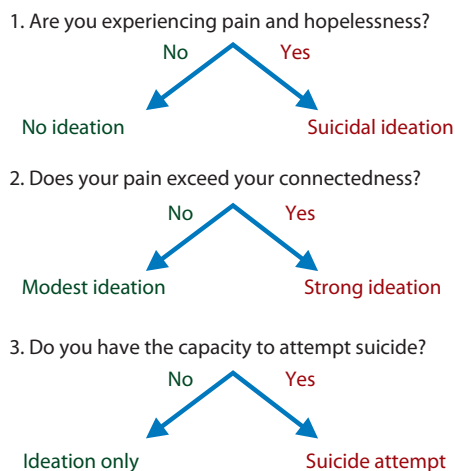
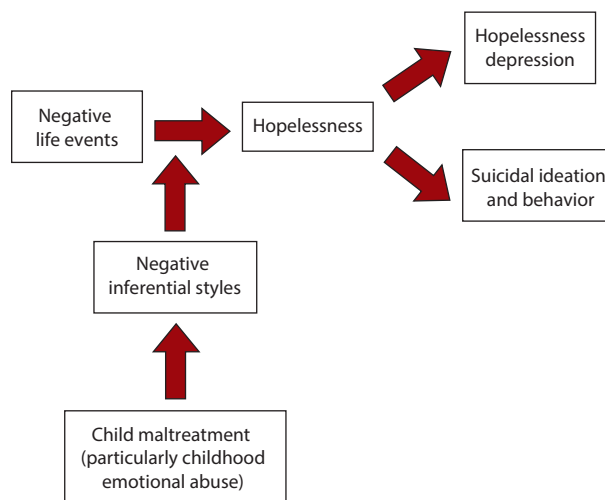
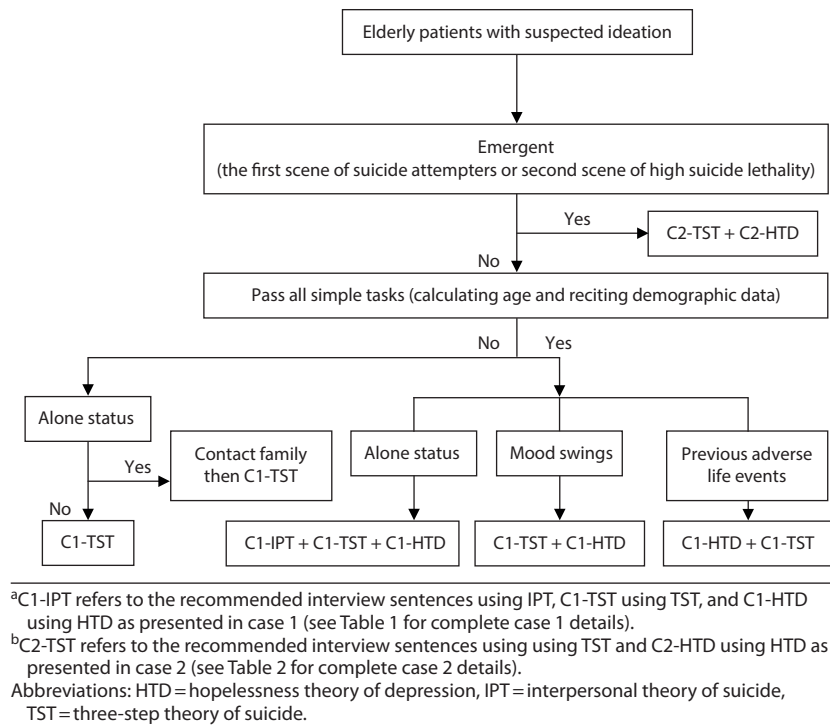


Figure 3. Hopelessness Theory of Depression



It is illegal to post this copyrighted PDF on any website.

Figure 4. Suggestions for Clinicians Interviewing Elderly Patients With Suspected Suicidal Ideation Incorporating 3 Theories of Suicide^{a,b}



are considered. Currently, as the medical system is on the verge of collapse due to COVID-19, a thorough and lengthy interview may not only exhaust medical resources but also increase the risk of infection for interviewers. Here, we chose to use variables from only 3 suicide theories; however, there are other theories that could be considered such as the fluid vulnerability theory,¹⁰ integrated motivational-volitional model,¹¹ borderline personality disorder theory,¹² and Durkheim's suicidology.¹³ The literature provides transgender, cross-cultural, and transnational support for the generalizability of the 3 main suicide theories^{7,14} used in this article.

In crisis intervention, the effectiveness of the engagement and rapport depends on how close the clinician's interview is to the exact intrinsic belief of the suicide attempter. The core precondition of IPT is the destruction of the interpersonal relationship, of TST is the psychache, and of HTD is the negative inferential style toward previous life events. Therefore, we provide some suggestions for clinicians in Figure 4.

Figure 4 shows possible scenarios for both cases according to the 3 suicide theories. Thus, C1-IPT refers to the recommended interview sentences for clinicians using IPT, C1-TST refers to using TST, and C1-HTD refers to using HTD per case 1 (see Table 1 for complete case 1 details). C2-IPT refers to the recommended interview sentences for clinicians using IPT, C2-TST refers to using TST, and C2-HTD refers to using HTD per case 2 (see Table 2 for complete case 2 details). The definition of *emergent* in Figure 4 refers to the first scene of suicide attempters or the second

scene of high lethality. If first responders to a suicide attempt are emergency medical technicians, police officers, or doctors or nurses in ambulances, the interview must be terse with more profound empathy. In such conditions, interview by C2-TST + C2-HTD is adequate. The second step of C2-TST covers the main content of C2-IPT. Development of rapport through early identification of the psychache may lower the patient's resistance to admitting negative inferential style.

In the nonemergent circumstance, assessment of the simple tasks of basic calculation and remote memory can clarify the impairment of cognition, which usually limits the attention to lengthy interview, distorts the interview sentences, and exaggerates the pessimistic attitude toward events. In C1-TST, the sentences related to psychache and hopelessness can cover the concept of negative inferential style in C1-HTD, and the sentences of connectedness can cover the concepts of belongingness and burdensomeness in C1-IPT. Hence, use of C1-TST is adequate for the geriatric patient with suspected cognitive impairment. C1-IPT may not be necessary because geriatric patients with caregivers often have sufficient belongingness. If the patient is alone, contacting the primary caregiver can not only prevent "daughter from California syndrome" (when a long-lost relative suddenly arrives at the hospital and insists that the medical team pursue aggressive life-prolonging interventions) but also ensure the patient's safety when he/she returns home. For individuals who are alone but not cognitively impaired, use of C1-IPT + C1-TST + C1-HTD may be adequate. For individuals with mood swings, use of C1-TST + C1-HTD can quickly establish empathy for the psychache, allowing for

Table 1. Case 1 Categorized According to 3 Suicide Theories

Case 1: An 80-year-old man, who was sent home from a hospital after a positive COVID-19 test, subsequently attempts suicide.

	Interpersonal Theory of Suicide	Three-Step Theory of Suicide	Hopelessness Theory of Depression
Intrinsic belief of the patient in case 1	I have to isolate myself to protect my family from COVID-19. Still, I feel lonely, and no one cares about me (thwarted belongingness). I do not want to be a burden to my children anymore (perceived burdensomeness). I would fear more to be a burden than a dead body. To save more food for the family, at least, I would rather cut my life than cut the fruit (capability to overcome one's natural fear of death).	I feel extremely bad for catching COVID-19 and no one can help me (first step). COVID-19 deprives my freedom, time with family, and ability to breathe efficiently (second step). Whenever I have the opportunity to be alone and get a knife, I will commit suicide (third step).	I suffer pain from my sore throat and severe cough. The disaster of COVID-19 will progress persistently, and it will take millions of lives in the future. I'm too fatigued to fight. I give up living. There's no reason for me to escape from COVID-19. I should end my life myself rather than be killed by COVID-19.
Recommended interview questions for clinicians	Do you think other people cannot understand your pain (recognize the thwarted belongingness)? Do you find yourself useless (recognize the burdensomeness)? Do you feel that being a burden to your family is worse than death (identify the capability to overcome the patient's fear of death)?	Are you experiencing enormous suffering or pain now (identify the psychache)? Do you feel hopeless (determine the hopelessness status)? Does the pain make you feel lonely and useless (identify "exceed someone's connectedness")? Do you consider attempting suicide (identify the capability to attempt suicide)?	Do you think COVID-19 symptoms will never get better? Do you believe COVID-19 can bring nothing but pain, home separation, food scarcity, and endless disaster? Do you think killing yourself can end the feelings of hopelessness?
Advice for management	When we meet any lonely elderly patient in a medical institution, we should contact the family to involve them in the decision-making process and provide education for COVID-19 care (for belongingness). Elderly patients' belongingness may benefit from real-time usage of social media, a practical tool for face-to-face communication. ^{15,16} Clarifying the low mortality of COVID-19 and the methods to reduce the risk factors for mortality can reduce burdensomeness. Removing dangerous materials from the patient's home (such as insecticide, corrosive liquid, knives, ropes, access to high places such as rooftops) can reduce the capability of suicide.	To lower the admission threshold for COVID-19, elderly patients can be told how to alleviate their symptoms, which will provide hope for recovery from COVID-19. Lower symptom intensity may relieve the patient's pain. If a COVID-19 diagnosis is confirmed and the elderly patient has a supportive network with adequate connectedness and a positive attitude, outpatient treatment is appropriate. Copies may be provided to the patient of examples of others who survived COVID-19, such as a 103-year-old man in Italy and a 103-year-old woman in China, to reduce the patients' hopelessness.	To reduce collective hopelessness, the government should improve the transparency of epidemic information, the supply of epidemic prevention materials (early detection screening test, facial masks, disinfectants), medical resources (ventilators, intensive care unit beds, and isolation rooms), and sufficient living materials. Although COVID-19 has an unprecedented nature with the 14-day incubation period and high transmission rates of asymptomatic patients, new information on the disease is being generated from doctors and scientists worldwide at an extraordinary rate. Acceleration of the rapid screen test, treatment protocol, and vaccine development is possible.

Abbreviation: COVID-19 = coronavirus disease 2019.

exploration of the pessimistic thoughts. C1-HTD + C1-TST fits the subgroup of patients with life events (eg, domestic violence, bullying, life-threatening events such as surgeries and wars, and long-term morbidity of multiple illnesses). Such a population with negative inferential style usually has a Omega sign or Veraguth's fold, low and slow pitch, monotonous vocabulary and tone, and down-deviation of sight and body axis. However, for an experienced clinician familiar with body language, use of C1-TST and C2-TST is adequate for most clinical settings. Adjustment of the intensity of nonverbal language facilitates advanced empathy and engagement.

COVID-19 patients have a broad spectrum of presentation, from asymptomatic to sepsis and multiple organ failure. Studies¹⁷⁻¹⁹ have shown the negative influence of mental disorders on the mortality and recovery of sepsis patients. If we screen, diagnose, and treat mental disorders in patients with COVID-19, they may benefit from lower

mortality and faster recovery. Hence, collaborative teams, including infectious disease and respiratory specialists and psychiatrists, are needed globally.

Elderly patients who prepare to attempt suicide are usually already experiencing mental health issues. In medical interviews, elderly individuals often need more respect and empathy than younger patients. Thus, if interviewers take the time to understand their mental distress, elderly patients will benefit from the empathy and therapeutic alliance, as well as the new belongingness resulting from the doctor-patient relationship. Receipt of immediate symptom relief from health care providers may restore the patient's faith in the medical field and facilitate hope. After treating the psychiatric illness, health care providers should encourage the patient to live for family and unfinished work to enhance connectedness, pain tolerance, and the desire to live.

If the medical system is overloaded due to COVID-19, omission of extensive interviews may be necessary. In

It is illegal to post this copyrighted PDF on any website

Table 2. Case 2 Categorized According to 3 Suicide Theories

Case 2: A 74-year-old woman visits an urgent care facility and has suspected COVID-19; however, there is a shortage of laboratory tests to confirm the diagnosis. She is sent home and subsequently hangs herself.

	Interpersonal Theory of Suicide	Three-Step Theory of Suicide	Hopelessness Theory of Depression
The intrinsic belief of the patient in case 2	How do I tell my family that I have suspected COVID-19? They won't do anything except curse me. My family won't understand COVID-19 or listen to me. No one cares about me (thwarted belongingness). I will spread COVID-19 to my family, thus there is no residual value to my life (burdensomeness). If I die, I will at least meet my ancestors (seeking alternative belongingness) without facing the vicious faces of my family. The rope is not terrifying but is instead an affordable pathway to see my mother (overcome the fear toward death and prepare to commit suicide).	The uncertainty of COVID-19 makes me feel pain. The hope of recovery from COVID-19 is very slim (first step). I am sure that no family will take care of me, and recovery from COVID-19 will be impossible (second step) if I have it. I'm convinced that to die with my native village ancestors is much better than to die with tubes and catheters in the cold hospital (third step).	I have heard all the terrifying COVID-19 news from newspapers, television, the internet, and social media. Everything the doctor tells me is nothing but a superficial consolation. I already have COVID-19, and I will spread COVID-19 to my family, neighbors, and friends if I don't commit suicide. Adverse destiny is inevitable. If I don't commit suicide, my family and I will soon die from COVID-19 together.
Recommended interview questions for clinicians	Do you worry about how to tell your family about your illness? Do you feel no one can take care of you or will care about you (thwarted belongingness)? Do you think that having COVID-19 is a huge burden to your family (burdensomeness)? Do you think that becoming a COVID-19 spreader is worse than killing yourself (overcome the fear toward death)?	Do you feel hopeless due to COVID-19's uncertainty and the potential for spread (first step)? Do you think that no one can understand or heal your pain? Do you feel the pain makes you useless (second step)? Do you consider killing yourself to end all the suffering (third step)?	Do you firmly believe you already have COVID-19 even without laboratory tests? Do you firmly believe COVID-19 will take the lives of all your family? Do you think killing yourself will save your family and other people?
Advice for management	In this case, reversing the burdensomeness is much harder than restoring the belongingness. If a patient has extreme fear and anxiety when informed about suspected COVID-19, contact the patient's principal family member or caregiver. At best, the family member can take the patient home to assure his/her safety. If the patient insists on going home alone, detailed family communication records in the medical chart can prevent the medical team from future disputes such as "daughter from California syndrome." ²⁰	If the elderly patient is alone and agitated with regard to COVID-19, contact the principal family member immediately to help alleviate the patient's angst and thwarted belongingness. In the initial medical interview, some simple tasks, such as asking the patient to calculate his/her age and recite demographic data, can quickly reveal lower cognitive status. The elderly patient with lower education level or unstable mental state may distort the doctor's information. Use the patient's native language when discussing COVID-19; explanations of big words and colorful pictures can help diminish misunderstandings about COVID-19 and reduce feelings of hopelessness.	If the elderly patient had a pessimistic attitude after experiencing war, disaster, plague, trauma, or childhood abuse, he/she will be inclined to be vulnerable to feelings of hopelessness regarding COVID-19. Such patients need robust evidence to acquire hope. Allowing the patient to connect with others who survived COVID-19 may help increase their faith and alleviate feelings of hopelessness.

Abbreviation: COVID-19 = coronavirus disease 2019.

such a circumstance, we recommend routinely executing a 1-minute screen using the 5-item Brief Symptom Rating Scale (BSRS-5)²¹ and previous suicide attempt history. The BSRS-5 was developed with adequate validity and reliability from the 50-item BSRS²¹⁻²³ via thousands of study participants. The BSRS-5 has been widely used for screening suicidal ideation and psychiatric illness in schools, communities, and hospitals.^{22,23}

CONCLUSION

This article, to our knowledge, is the first to focus on geriatric mental health to prevent suicide during the

COVID-19 pandemic. The need for identification and treatment of those with mental health issues, especially among the elderly population, and collaborative multidiscipline management teams is increasing during the current global pandemic. Suicide prevention in elderly patients is worthy of strong public attention.

Received: May 16, 2020.

Published online: October 22, 2020.

Potential conflicts of interest: None.

Funding/support: None.

Acknowledgments: The article pays tribute to the mental health experts of Kaohsiung Armed Forces General Hospital.

REFERENCES

1. Preventing suicide: A global imperative. World Health Organization website. https://www.who.int/mental_health/suicide-prevention/world_report_2014/en/. 2014.
2. Curtin SC, Warner M, Hedegaard H. Increase in suicide in the United States, 1999–2014. *NCHS Data Brief*. 2016;(241):1–8.
3. Leavey G, Rosato M, Galway K, et al. Patterns and predictors of help-seeking contacts with health services and general practitioner detection of suicidality prior to suicide: a cohort analysis of suicides occurring over a two-year period. *BMC Psychiatry*. 2016;16(1):120.
4. Fifield PY. Confidence And Connectedness: A Mixed Methods Study On Patients Managing Co-Occurring Physical And Behavioral Health Conditions [dissertation]. Biddeford, Maine: University of New England; 2015.
5. Van Orden KA, Witte TK, Cukrowicz KC, et al. The interpersonal theory of suicide. *Psychol Rev*. 2010;117(2):575–600.
6. Dhingra K, Klonsky ED, Tapola V. An empirical test of the three-step theory of suicide in UK university students. *Suicide Life Threat Behav*. 2019;49(2):478–487.
7. Liu RT, Kleiman EM, Nestor BA, et al. The hopelessness theory of depression: a quarter-century in review. *Clin Psychol (New York)*. 2015;22(4):345–365.
8. Klonsky ED, May AM, Saffer BY. Suicide, suicide attempts, and suicidal ideation. *Annu Rev Clin Psychol*. 2016;12(1):307–330.
9. Weiss P, Murdoch DR. Clinical course and mortality risk of severe COVID-19. *Lancet*. 2020;395(10229):1014–1015.
10. Rudd MD. Fluid vulnerability theory: a cognitive approach to understanding the process of acute and chronic suicide risk. In: Ellis TE, ed. *Cognition and Suicide: Theory, Research, and Therapy*. 2006:355–368.
11. Dhingra K, Boduszek D, O'Connor RC. A structural test of the integrated motivational-volitional model of suicidal behaviour. *Psychiatry Res*. 2016;239:169–178.
12. Lieb K, Zanarini MC, Schmahl C, et al. Borderline personality disorder. *Lancet*. 2004;364(9432):453–461.
13. Durkheim E. *Suicide: A Study in Sociology*. 2nd edition. Oxford, United Kingdom: Routledge; 2005.
14. Klonsky ED, Saffer BY, Bryan CJ. Ideation-to-action theories of suicide: a conceptual and empirical update. *Curr Opin Psychol*. 2018;22:38–43.
15. Bekalu MA, McCloud RF, Viswanath K. Association of social media use with social well-being, positive mental health, and self-rated health: disentangling routine use from emotional connection to use. *Health Educ Behav*. 2019;46(2 suppl):69–80.
16. Chen Y-RR, Schulz PJ. The effect of information communication technology interventions on reducing social isolation in the elderly: a systematic review. *J Med Internet Res*. 2016;18(1):e18.
17. Ribe AR, Vestergaard M, Katon W, et al. Thirty-day mortality after infection among persons with severe mental illness: a population-based cohort study in Denmark. *Am J Psychiatry*. 2015;172(8):776–783.
18. Davydow DS, Ribe AR, Pedersen HS, et al. The association of unipolar depression with thirty-day mortality after hospitalization for infection: a population-based cohort study in Denmark. *J Psychosom Res*. 2016;89:32–38.
19. Prescott HC, Angus DC. Enhancing recovery from sepsis: a review. *JAMA*. 2018;319(1):62–75.
20. Molloy DW, Clarnette RM, Braun EA, et al. Decision making in the incompetent elderly: "the daughter from California syndrome." *J Am Geriatr Soc*. 1991;39(4):396–399.
21. Lin S-L, Wu S-L, Huang H-T, et al. Can a 10-minute questionnaire identify significant psychological issues in patients with temporomandibular joint disease? *J Oral Maxillofac Surg*. 2017;75(9):1856–1865.
22. Lee M-B, Liao S-C, Lee Y-J, et al. Development and verification of validity and reliability of a short screening instrument to identify psychiatric morbidity. *J Formos Med Assoc*. 2003;102(10):687–694.
23. Lung FW, Lee MB; F-W L. The five-item Brief-Symptom Rating Scale as a suicide ideation screening instrument for psychiatric inpatients and community residents. *BMC Psychiatry*. 2008;8(1):53.