Cancer and Suicide Risk – Risk Factors for Suicide Following a Cancer Diagnosis

From Science to Practice

Using Research to Promote Safety and Prevent Suicide

Overview

Suicide rates are higher for individuals diagnosed with cancer, with the overall standard mortality ratio (SMR) of suicide within the year after diagnosis over two and a half times as high as the general population.[1] Everyone has a different baseline risk for suicide, and factors such as cancer type, time since diagnosis, poor prognosis, and problems with physical functioning may exacerbate any preexisting risk.[2] Healthcare providers should screen and identify at-risk individuals, promote collaborative care with mental health and palliative care professionals, and monitor for new or worsening distress.

Key Findings

Cancer and Suicide Risk

- Cancer patients with a terminal illness, distant-stage disease, poor prognosis, uncontrolled physical symptoms, or who are receiving treatment with palliative intent are at higher risk for depression, hopelessness, and suicide.[3]
- General risk factors for suicidal behavior among people living with cancer include medical or psychiatric comorbidities, low perceived social support, Veteran status, and sociodemographic factors such as older age, male gender, unmarried status, and non-Hispanic White race.[1,2,4,5,6,7,8,9]
- Cancer-specific suicide risk factors include cancer site, distressing cancer-related symptoms (e.g., pain, fatigue, impaired physical functioning, disfigurement), prognosis (distant or advanced staging), and time since diagnosis.[1,8,9]
- One study found that the highest risk of suicide occurred within the first 6 months after cancer diagnosis, with individuals who had received a diagnosis during that period having more than 7 times the risk of suicide when compared to the general public.[9] The risk of suicide decreased as the time following diagnosis increased, though suicide risk remained higher than the general population up until 5 years after the initial diagnosis.[9]
- The highest SMR among cancer patients varied across studies. Those with distant stage cancer diagnosis and those with cancer types with a high symptom burden had the highest SMR when compared to other stages and cancer types in some studies,[9,10] while other studies reported that bronchitis, trachea and lung cancers specifically had the highest SMR.[10] When compared to the general population, those with prostate and thyroid cancer had lower suicide risk.[9]
- Suicide rates were high for individuals undergoing surgery for cancer, especially when the cancer had a lower than 5-year survival rate or had a localized disease. Among a sample of cancer patients undergoing surgery, 3% of suicides occurred within the first month after surgery, 21% of suicides occurred within the first year, and 50% of suicides occurred within the first 3 years.[11]
- Cancer type may also have a role in the amount of time between surgery and suicide. Patients with brain cancers died by suicide between 2- and 37-months following surgery, with about 50% of the suicides occurring withing the first year; patients with cervical cancer died by suicide between 44- and 134-months following surgery, with less than 6% of suicides occurring within the first year after surgery.[11]
- Individuals who were diagnosed with cancer and had higher SMRs were more likely to be male, Hispanic, American Indian, Alaska Native, Asian or Pacific Islander, had Medicaid, had Medicare (<64), insured by the VA or HIS/PHS, were uninsured, and were living in rural areas.9
- Geographical locations may influence SMRs as well. Wyoming had the lowest SMR at 0.47 and Alaska had the highest SMR at 1.77. When compared to the general population, those in Alaska, North Dakota, Nebraska, and New Mexico with cancer had the highest SMRs.[9]
- Individuals with cancer are at an increased risk for adverse mental health outcomes (e.g., depression, anxiety, PTSD, substance use disorders, suicidal behavior) compared to the general population.[12,13]

- Like the general population, firearms are the most common and most lethal method of death by suicide in individuals with cancer.[3,6,14]

Cancer and Suicidal Behavior in the Veteran Population

- Research on Veterans diagnosed with cancer found that 25% reported suicidal ideation[15,16] and experienced depression, anxiety, and PTSD symptoms. Anhedonia and depressed mood were predictive of suicidal ideation.[16]
- Veterans were at the highest risk of suicide within the first 3 months of cancer diagnosis.[17] When compared to Veterans without a new cancer diagnosis, new cancer diagnosis were associated with a 47% higher risk of suicide.[17]
- The most common cancer types for Veteran suicide descendants were esophageal and head and neck cancer whereas cancers where suicide was less common were kidney/other urinary, lung cancer, melanoma, pancreatic, prostate, and cancers at stage 0.[17]
- Among Veterans living with cancer, those with severe distress and family problems, more specifically those involving a partner, were more likely to report suicidal ideation and have a history of suicide attempts compared to Veterans with mild or moderate distress.[15] Veterans who reported problems with their partners were five times more likely to report suicidal ideation than those who did not report partner issues.[15]
- In a study of a Veteran population diagnosed with cancer, researchers identified depression (59%), medical comorbidities (59%), and pain (47%) as suicide risk factors, similar to the general cancer population.[3] Many of these suicide deaths occurred upon diagnosis (25%) or during palliative treatment (44%) rather than unknown treatment (9%), curative treatment (3%), undetermined (2%) or at 5-year follow-up (17%).[3] Most deaths occurred within the first 24 hours (41%) and 2-7 days (27%) after a medical encounter.[3]
- Suicide decedents with a history of cancer were more likely to be male, older, non-Hispanic white, and at a distant stage.[6,17]
- Veterans living with advanced lung cancer undergoing palliative care were at a decreased risk of death from suicide compared to those who did not receive palliative care.[14]

Ways You Can Help

- Regularly screen cancer patients for distress severity and suicidal risk, especially at times of higher suicide risk (at diagnosis, within the first 3 months of diagnosis, if the patient has no social support.[15,17] The National Comprehensive Cancer Network (NCCN)'s ***Distress Thermometer assessment*** is a useful tool to screen for psychological distress.[3]
- Inquire about feelings of hopelessness, despair, worthlessness, helplessness, and perceived burdensomeness as one experiences a terminal diagnosis or nears end of life where thoughts of death or death contemplation is common. Encourage those in distress to Dial 988 and to Press 1, to Text 838255 or to Visit the ***VA's Veterans Crisis Line*** Online Chat.
- Encourage Veterans to use ***Virtual Hope Box Google App*** or ***Virtual Hope Box Apple App***. These focus on helping Veterans manage negative thoughts and feelings, including thoughts of suicide. The app lets Veterans store a collection of photos, music, and messages that reduce stress and hopelessness. It also includes relation techniques, games for distraction, inspiring quotes, and one-touch access to the Veterans Crisis Line.
- ***Referring patients to specialty care*** as needed (e.g., mental health, social work, nutrition and food service, pain clinic, chaplaincy, physical therapy, occupational therapy) helps to manage distressing symptoms and other challenges.
- ***Goals of Care Conversations*** are useful to elicit patients' values and goals, provide information about support services (e.g., palliative care, home-based services), and coordinate care with other providers.
- ***Early palliative care*** reduces rates of depression, psychological distress, stress, caregiver burden, and improves quality of life and satisfaction with care among individuals living with advanced cancer.[18]
- Taking ***VA's team approach to healthcare*** helps with communicating treatment plans, prognosis, Veteran psychosocial needs, or suicide risk.[3]
- Encourage Veterans and their caregivers to visit ***VHA Social Work webpage*** for any challenges relating to housing, finance, mood, relationship, and physical limitation issues. Direct caregivers of Veterans with cancer to check out the VA

Caregiver Support website.

- Learn more about the assessment and management of patients at risk for suicide from the VA/DoD Clinical Practice ***Guidelines***.

There is no single cause of suicide. It is often the result of a complex interaction of risk and protective factors at the individual, interpersonal, community, and societal levels. To prevent Veteran suicide, we must maximize protective factors and minimize risk factors at all of these levels.

References

1 Saad, A. M., Gad, M. M., Al-Husseini, M. J., AlKhayat, M. A., Rachid A., Alfaar, A. S., & Hamoda, H. M. (2019). Suicidal death within a year of a cancer diagnosis: A population-based study. *Cancer 125*,(6) :972–79.

2 Bulotiene, G., & Pociute, K. (2019). Interventions for reducing suicide risk in cancer patients: A literature review. *Europe's Journal of Psychology, 15*(3), 637–649.

3 Aboumrad, M., Shiner, B., Riblet, N., Mills, P. D., & Watts, B. V. (2018). Factors contributing to cancer-related suicide: A study of root-cause analysis reports. *Psycho-oncology*, *27*(9), 2237–2244.

4 Amiri, S., & Behnezhad, S. (2020). Cancer diagnosis and suicide mortality: A systematic review and meta-analysis. *Archives of Suicide Research : Official Journal of the International Academy for Suicide Research*, *24*(sup2), S94–S112.

5 Henson, K. E., Brock, R., Charnock, J., Wickramasinghe, B., Will, O., & Pitman, A. (2019). Risk of suicide after cancer diagnosis in England. *JAMA Psychiatry*, *76*(1), 51–60.

6 Massetti, G. M., Holland, K. M., Jack, S., Ragan, K. R., & Lunsford, N. B. (2019). Circumstances of suicide among individuals with a history of cancer. *Psycho- oncology, 27*(7), 1750–1756.

7 Spencer, R. J., Ray, A., Pirl, W. F., & Prigerson, H. G. (2012). Clinical correlates of suicidal thoughts in patients with advanced cancer. *The American Journal of Geriatric Psychiatry : Official Journal of the American Association for Geriatric Psychiatry*, *20*(4), 327–336.

8 Zaorsky, N. G., Zhang, Y., Tuanquin, L., Bluethmann, S. M., Park, H. S., & Chinchilli, V. M. (2019). Suicide among cancer patients. *Nature Communications*, 10(1), 207.

9 Hu, X., Ma, J., Jemal, A., Zhao, J., Nogueira, L., Ji, X., Yabroff, K. R., & Han, X. (2023). Suicide Risk Among Individuals Diagnosed with cancer in the US, 2000-2016. *JAMA Network Open*, *6*(1), e2251863.

10 Calati, R., Filipponi, C., Mansi, W., Casu, D., Peviani, G., Gentile, G., Tambuzzi, S., Zoja, R., Fornaro, M., Lopez-Castroman, J., & Madeddu, F. (2021). Cancer diagnosis and suicide outcomes: Umbrella review and methodological considerations. *Journal of Affective Disorders*, *295*, 1201–1214.

11 Potter, A. L., Haridas, C., Neumann, K., Kiang, M. V., Fong, Z. V., Riddell, C. A., Pope, H. G., Jr, & Yang, C. J. (2023). Incidence, timing, and factors associated with suicide among patients undergoing surgery for cancer in the US. *JAMA Oncology, 9*(3), 308–315.

12 Singer, S., Das-Munshi, J., & Brähler, E. (2010). Prevalence of mental health conditions in cancer patients in acute care--a meta-analysis. *Annals of Oncology : Official Journal of the European Society for Medical Oncology*, *21*(5), 925–930.

13 Han, X., Hu, X., Zhao, J., Ma, J., Jemal, A., & Yabroff, K. R. (2021). Trends of cancer- related suicide in the United States: 1999-2018. *Journal of the National Cancer Institute*, *113*(9), 1258–1262

14 Sullivan, D. R., Forsberg, C. W., Golden, S. E., Ganzini, L., Dobscha, S. K., & Slatore, C. G. (2018). Incidence of suicide and association with palliative care among patients with advanced lung cancer. *Annals of the American Thoracic Society, 15*(11), 1357–1359.

15 Munson, S. O., Cabrera-Sanchez, P., Miller, S. N., & Phillips, K. M. (2020). Distress and factors associated with suicidal ideation in veterans living with cancer. *Federal Practitioner : For the Health Care Professionals of the VA, DoD, and PHS, 37*(Suppl 2), S8–S15.

16 Johnson, C. C., Phillips, K. M., & Miller, S. N. (2020). Suicidal Ideation among Veterans living with cancer referred to mental health. *Clinical Gerontologist, 43*(1), 24–36.

17 Dent, K. R., Szymanski, B. R., Kelley, M. J., Katz, I. R., & McCarthy, J. F. (2022). Suicide risk following a new cancer diagnosis among veterans in Veterans Health Administration care. *Cancer Medicine, 10*.1002/cam4.5146.

18 Ferrell, B. R., Temel, J. S., Temin, S., Alesi, E. R., Balboni, T. A., Basch, E. M., Firn, J.I., Paice, J. A., Peppercorn, J. M., Phillips, T., Stovall, E. L., Zimmermann, C., & Smith, T. J. (2017). Integration of palliative care into standard oncology care: American society of clinical oncology clinical practice guideline update. *Journal of Clinical Oncology : Official Journal of the American Society of Clinical Oncology*, *35*(1), 96–112.