

Deaths of Despair in Rural Populations

Tirzah Wittenberg & Dr. Pam Hulstein
Northwestern College, Department of Nursing

Purpose

- Examine research regarding the prevalence of substance abuse and suicide in different population densities
- Create a foundation of understanding for making healthcare resource decisions on micro and macro levels
- Partner with a local health care agency for project development and dissemination

Introduction

Suicide is one of the highest leading causes of deaths, with rates increasing over the last 20 years (Garnett & Curtin, 2023; Xu et al., 2020).

- Within rural populations, suicide rates have increased by **41%** between 1999 and 2016 in the United States (Steelesmith et al., 2019).
- Peak rates occurred at **14.2%** in 2018 (Garnett & Curtin, 2023; Z. Ivey-Stephenson et al., 2017).

Knowledge of this issue enables mental health organizations to intervene and distribute resources to meet disparities. This can look like engaging multiple levels of intervention and engaging a variety of organizations or programs to meet the specific needs of each community.

Definitions

Substance Abuse: The use of an illegal or unprescribed drug, or the inappropriate habitual use of another drug or alcohol, especially when resulting in addiction.

Deaths of Despair: Refers to mortality or morbidity from suicide, alcohol poisoning, or drug overdose.

Rural Communities: Reclassified every decennial census using Rural Urban Continuum Codes (RUCC), established by the U.S. Department of Agriculture.

Clinical Question

In cases of substance abuse related suicides, how do occurrences in rural populations compare to urban populations?

Methods

Literature Review utilizing the Johns Hopkins Appraisal tool to determine quality and level of evidence.

Substance Abuse and Suicide – 3 articles

- **18.4%** of young adults in Iowa, ages 18-25, have a substance use disorder, nationally at **14.7%** from 2017-2019. **12.8%** of young adults deal with suicidal thoughts from 2017-2019.
- **59%** of patients presenting to the emergency department with suicidal ideation also reported substance abuse, **20%** abusing more than one substance.
- **41%** of all rural suicide deaths reported from 2012-2015 were positive for opioids and benzodiazepines, compared to **34%** found in urban decedents.

Therefore, suicide and substance abuse are prevalent individually and correlate together, even more so in rural populations.

Suicide and Rurality – 4 articles

- Suicide rates are higher in rural or lower density populations.
- Rural residents are more susceptible to effects of deprivation, and less likely to report suicidal ideations.
- Rural residents had lower rates of nonfatal suicidal behavior but higher rates of suicide.

This suggests the use of separate approaches to address rural and urban substance abuse-related suicides.

Deaths of Despair – 3 articles

- Deaths of despair is higher in counties with higher degree of rurality, associated with economic distress & fundamental resource access
- In Illinois it was found that suicide mortality in rural counties was higher, which was associated with economic distress, while urban counties showed that drug use mortality was higher due to drug availability.
- Causes of deaths of despair: financial distress, lack of infrastructure and access to fundamental resources, deteriorating sense of community, and dysfunction in family life.

Overall, this suggests some of the factors that contribute to rurality having increased rates of deaths of despair, while also pointing out the importance of individualizing assessments to each population.

Results

- Generally consistent, positive correlations between substance abuse, suicide, and rurality
- Studies support population specific research to determine effective levels of intervention
- Within recorded suicide deaths, substance use is commonly reported (over 50%)
- Rural suicide is often in association with:
 - Decreased social interaction
 - Increased susceptibility to deprivation effects (lower education, employment, income)
 - Economic distress
- Economic distress may encompass
 - Issues in education
 - Healthcare access and insurance
 - Grocery access
 - Fundamental resources
 - Deteriorating sense of community
 - Increasing family dysfunction

Interventions

- **Government Level:** Grants and resources to fund shifts in resources.
- **County Level:** Public health programs to increase awareness, screening and access to resources such as healthcare, health insurance, and grocery stores. As well as education on increasing resiliency, community engagement and support, and social and communication skill programs.
- **Community Level:** Nonprofits, churches, and other organizations can promote community and support for the individual people they serve.
- **Healthcare Level:** Hospitals, clinics, and therapy centers can screen and connect those at risk with resources.

Acknowledgements

In partnership with Dr. David Nehring, Executive Directors of Bethesda Christian Counseling.

Conclusion

Creating a foundation of understanding in regard to mental and physical health is important to inform methods aimed at the reduction of prevalence.

This project provided foundational understanding about factors surrounding deaths of despair in rural populations.

This research recommends a multilevel approach for advocating for awareness and change.

- Examples of change: government funding, public health resources, insurance, community support, education on communication and resilience, decreasing deprivation and economic distress

Changes should be individualized to each rural community for appropriate use of limited resources.

Sources

- Azuceta, R., Pinna, M., Manchia, M., Simbula, S., Tondo, L., & Baldessarini, R. J. (2021). Suicidal risks in rural versus urban populations in Sardinia. *Journal of Affective Disorders*, 295, 1449-1455. <https://doi.org/10.1016/j.jad.2021.09.024>
- Bensley, K. M., Kerr, W. C., Barnett, S., & Mulia, N. (2021). Postmortem screening of opioids, benzodiazepines, and alcohol among rural and urban suicide decedents. *Journal of Rural Health*, 38(1), 77-86. <https://doi.org/10.1111/jrh.12574>
- Cataldo, J. (2022). Drugs or despair? Unraveling the rise in deaths of despair in Illinois. *Journal of Public Mental Health*, 21(3), 226-238. <https://doi.org/10.1108/JPMH-01-2022-0004>
- Dang, D., Dearholt, S., Bissett, K., Ascenzi, J., & Whalen, M. (2022). *Johns Hopkins evidence-based practice for nurses and healthcare professionals: Model and guidelines*. 4th ed. Sigma Theta Tau International.
- Garnett, M.F. & Curtin, S.C., M.A. (2023). *Suicide Mortality in the United States, 2001-2021*. (464). DOI: <https://dx.doi.org/10.15620/cdc:125705>. <https://stacks.cdc.gov/view/cdc/125705>.
- George, D. R., Snyder, B., Van Scoy, L. J., Brignone, E., Sinoway, L. L., Sauder, C. L., Murray, A., Gladden, R. M., Ramedani, S., Ernharth, A., Gupta, N., Saran, S., & Kraschewski, J. L. (2021). Perceptions of diseases of despair by members of rural and urban high-prevalence communities. *JAMA Network Open*, 4(7), e2118134. <https://doi.org/10.1001/jamanetworkopen.2021.18134>
- Goldman-Mellor, S., Allen, K., & Kaplan, M. S. (2017). Rural/urban disparities in adolescent nonfatal suicidal ideation and suicide attempt: A population-based study. *Suicide and Life-Threatening Behavior*, 48(6), 709-719. <https://doi.org/10.1111/slib.12390>
- Ivey-Stephenson, A.Z., Crosby, E., Jack, P.D., Haileyus, T. & Kresnow-Sedacca, M. (2017). Suicide trends among and within urbanization levels by sex, race/ethnicity, age group, and mechanism of death — United states, 2001-2015. *MMWR Surveillance Summaries*, 66(18), 1-16. DOI: <http://dx.doi.org/10.15585/mmwr.ss6618a1>. https://www.cdc.gov/mmwr/volumes/66/ss/ss6618a1.htm?s_cid=ss6618a1_w
- Lee, J. H., Wheeler, D. C., Zimmerman, E. B., Hines, A. L., Chapman, D. A. (2023). Urban-rural disparities in deaths of despair: A county-level analysis 2004-2016 in the U.S. *American Journal of Preventative Medicine*, 64(2), 149-156. <https://doi.org/10.1016/j.amepre.2022.08.022>.
- Murphy, S. M. (2013). Determinants of adolescent suicidal ideation: Rural versus urban. *Journal of Rural Health*, 30(2), 175-185. <https://doi.org/10.1111/jrh.12042>
- Shelly, J. A., & Miller, A. B. (2009). *Called to care: A Christian worldview for nursing*. InterVarsity Press.
- Steelesmith, D. L., Fontanella, C. A., Campo, J. V., Bridge, J. A., Warren, K., & Root, E. D. (2019). Contextual factors associated with county-level suicide rates in the United States, 1999 to 2016. *JAMA Network Open*, 2(9), e1910936. <https://doi.org/10.1001/jamanetworkopen.2019.10936>
- Substance Abuse and Mental Health Services Administration. Behavioral Health Barometer: Iowa, volume 6: Indicators as measured through the 2019 National Survey on Drug Use and Health and the National Survey of Substance Abuse Treatment Services. HHS Publication No. SMA-20-Baro-19-1A. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2020.
- Tadros, A., Sharon, M., Crum, M. R., Johnson, R. C., Quedado, K., Fang, W., & Inaba, H. (2020). Coexistence of substance abuse among emergency department patients presenting with suicidal ideation. *BioMed Research International*, 2020, 1-5. <https://doi.org/10.1155/2020/7460701>
- USDA ERS - Rural classifications. (n.d.). <https://www.ers.usda.gov/topics/rural-economy-population/rural-classifications/>
- Xu, J., Murphy, S. L., Kochanek, K. D., & Arias, E. (2020). *Mortality in the United States, 2018*. (355). <https://stacks.cdc.gov/view/cdc/84648>.