

Diseases of Despair in Rural and Farm Families in Wisconsin



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Background: Life expectancy is stagnant in the U.S., which is heavily influenced by increased mortality rates in middle-aged adults. Diseases of despair (DoD), including alcohol abuse, substance use, and suicidal ideation/attempt, have emerged as being particularly influential on this trend, most notably in rural areas and among those with more physically demanding occupations such as farming. This is a critically important issue in families, where children are vulnerable to a myriad of long-term consequences stemming from DoD in

household members. The purpose of this study was to examine associations between DoD and farm/rural residency in households with children.

Methods: A cross-sectional analysis was conducted using medical records data from an existing cohort of all members of households with children in a 20-county region of north-central Wisconsin. DoD was identified by screening for a composite of diagnostic codes for alcohol abuse, substance use, and suicidal ideation/attempt in 2017-2022. Multivariable logistic regression was used to examine associations between farm residence and DoD. Secondary analyses examined DoD by farm type and rural residency.

Results: The sample included 7,613 participants who lived on farms and 190,106 who did not live on farms. DoD was observed in 2% of farm and 4% of non-farm participants. After covariate adjustment, farm residents had significantly lower odds of DoD (adjusted odds ratio [aOR] [95% confidence interval; CI] = 0.58 [0.50, 0.68], $p < .0001$) relative to non-farm residents. Secondary analyses found DoD risk was lowest in dairy farm residents and highest in rural, non-farm residents.

Conclusions: Individuals who live on farms are about half as likely to experience DoD as compared to their non-farm counterparts. Differences were particularly stark between those who lived on dairy farms vs. rural residents who did not live on farms. Additional research is needed to identify causal factors within farm environments that may protect residents from DoD.