

# STRONG CHILDREN'S RESEARCH CENTER

## Summer Research Scholar

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### ABSTRACT

**Title:** *Suicide-protective effects conveyed by peer relationships in adolescence*

#### **Background:**

Suicide is the fourth leading cause of death in youth ages 15-19 years (WHO, 2021). Studies have reported that teens with fewer trustworthy peer and adult relationships are more at risk for suicidal ideation and attempts while those with larger social networks have reduced risk (Wyman et al., 2019; Pisani et al., 2012). However, the preventative benefit of each additional friend nominated is unknown, including the point at which subsequent friends offer only trivial benefit to a given person.

To establish a benchmark for practically insubstantial reduction in suicide risk (i.e., a Region of Practical Equivalence; ROPE; Kruschke, 2018), we considered the smallest daily fluctuation in suicide attempt rates across the average week. Specifically, according to data from the National Center for Health Statistics, in 1997, suicide attempt rates (per 100,000) were lowest on Fridays and Saturdays, with rates of 103.52 and 104.38 occurring on those days, respectively (Miller et al., 2012). The difference between these two rates (1.008) was operationalized as a practically insignificant effect, representing the natural fluctuation in suicide rates over time.

#### **Objective:**

This study sought to investigate the relationship between the number of nominated friends in an individual's social network and their risk for suicide attempt, examining the number of friends that would yield a clinically insignificant change in suicide attempts with each additional nomination.

#### **Results and Conclusion:**

Results of a logistic regression using past year suicide attempt as the outcome and number of nominated friends as the predictor found an 11% reduction in the odds ( $b = -0.111$ ,  $SE = 0.012$ ,  $p < 0.001$ ,  $OR = 0.89$ ) of a reported suicide attempt with each additional friend nominated. Taking the base rate prevalence of suicide attempts in this sample into account, the reduction in suicide attempt probability became practically insignificant (i.e., difference  $< 1.0\%$ ) between four (prob = 9.9%) and five friends (prob = 8.9%). That is, for a person with four or more friends, adding an additional friend is likely to be no more influential on suicide risk than the smallest daily fluctuation in risk they would otherwise experience throughout an average week. In this way, peer relationships are clearly influential on suicide risk, but they produce diminished returns much faster than is often assumed.

## References:

- Kruschke, J. K. (2018). Rejecting or accepting parameter values in Bayesian estimation. *Advances in methods and practices in psychological science, 1*(2), 270-280.
- Miller, T. R., Furr-Holden, C. D., Lawrence, B. A., & Weiss, H. B. (2012). Suicide deaths and nonfatal hospital admissions for deliberate self-harm in the United States. Temporality by day of week and month of year. *Crisis, 33*(3), 169–177. <https://doi.org/10.1027/0227-5910/a000126>
- Pisani, A. R., Wyman, P. A., Petrova, M., Schmeelk-Cone, K., Goldston, D. B., Xia, Y., & Gould, M. S. (2012). Emotion regulation difficulties, youth–adult relationships, and suicide attempts among high school students in underserved communities. *Journal of Youth and Adolescence, 42*(6), 807–820. <https://doi.org/10.1007/s10964-012-9884-2>
- WHO. (2021, June 17). *Suicide*. World Health Organization. Retrieved June 30, 2022, from <https://www.who.int/news-room/fact-sheets/detail/suicide>
- Wyman, P. A., Pickering, T. A., Pisani, A. R., Rulison, K., Schmeelk-Cone, K., Hartley, C., Gould, M., Caine, E. D., LoMurray, M., Brown, C. H., & Valente, T. W. (2019). Peer-adult network structure and suicide attempts in 38 high schools: Implications for network-informed suicide prevention. *Journal of Child Psychology and Psychiatry, 60*(10), 1065–1075. <https://doi.org/10.1111/jcpp.13102>