

OPTIMIZING ALCOHOL INTERVENTIONS IN SORORITIES: A SOCIAL NETWORK ANALYSIS APPROACH

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Background: Alcohol consumption is prevalent among college students in sororities and fraternities (i.e., Greek life) across America, with members exhibiting an elevated risk for risk-oriented alcohol consumption. Addressing this public health concern requires optimizing alcohol intervention strategies by understanding drinking network structures. Traditionally, formal leadership in these organizations is leveraged to disseminate preventive measures. This study investigates a sorority's drinking buddy network to identify influential members and their roles, thereby informing more targeted and effective intervention approaches.

Methods: Social network analysis was applied to examine the structure of a drinking buddy network within a sorority at a Midwestern university. Survey data from 99 members (45.21% response rate) were analyzed to identify drinking patterns. UCInet was used to assess network centrality, subgroups, and homophily based on year in school and leadership roles. The hypothesis was that a member's year in school and leadership role within the sorority would be significantly related to their ties in the network.

Results: The analysis revealed that year in school significantly correlated with drinking ties ($r = 0.092$, $p < 0.001$), with members predominantly associating within their cohort. Contrary to expectations, sorority leaders were less central in the drinking network and did not significantly influence alcohol-related social connections ($\text{Adj } R^2 = 0.003$, $p > 0.09$). Instead, non-leaders were highly central and pivotal in network connectivity, suggesting that these

individuals may be key network actors for intervention strategies.

Conclusions: These findings challenge the conventional reliance on sorority leadership for alcohol risk management intervention delivery. The results suggest shifting focus to central, non-leaders within drinking networks. Targeting these key network actors could enhance the diffusion and effectiveness of intervention initiatives, aligning intervention points with the actual social structure. Further research should explore the broader applicability of network-based strategies in public health interventions within Greek life.

Keywords: social network analysis, alcohol consumption, Greek life, public health