

Relationships Between Health Behaviors, Social Determinants of Health, and Patient Demographics in an Urban Northwest Indiana Hospital

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Background: Social determinants of health (SDOH) contribute to over 50% of health outcomes and inequities. Healthcare institutions are increasingly implementing SDOH screenings and referrals. St. Mary Medical Center (SMMC) in Northwest Indiana was the first acute care hospital to implement a comprehensive SDOH pilot screening and referral program in Indiana using the validated Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences (PRAPARE). This study is part of a three-phased Community-Based Participatory Research (CBPR) partnership between IUSM-NW and SMMC to examine and address SDOH within SMMC's service area from January 2022-January 2025. This study's research question is: What are the relationships between SDOH, behavioral, and demographic factors in SMMC's inpatients?

Methods: This descriptive study analyzed a limited dataset generated by SMMC from EPIC™ with SDOH, demographic, behavioral (tobacco use, alcohol use, physical activity), and health outcomes data for adult inpatient visits from January 2021 to June 2022. Data analysis was conducted in SPSS 28.0 using descriptive statistics (i.e., frequencies and central tendency) and tests of association including Chi-square, Fisher's Exact, Wilcoxon-Mann Whitney, and Kruskal Wallis H ($p < 0.05$). This study was exempted by Indiana University Human Research Protection Program (IRB # 14040).

Results: This study included 4370 inpatients, who were predominantly White (75.7%), older adults (65 ± 24), and publicly insured (76.3%). There were significant relationships between SDOH and tobacco use, alcohol use, and physical activity. Tobacco use was significantly associated with the majority of SDOH including insurance type ($p < .001$), housing risk ($p < .001$), financial resource risk ($p < .001$), unmet transportation needs ($p < .001$), and overall social risk ($p = .012$).

Conclusions: Understanding how SDOH influence health behaviors will inform efforts to develop, implement, and evaluate multi-level interventions. The next phases of this CBPR will use advanced statistical techniques to further explore these relationships, evaluate SMMC's pilot program, and co-develop SDOH interventions.