Association of Socio-Demographic Factors, Social Determinants of Health, and Weekly Physical Activity in an Urban Hospital in Northwest Indiana

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Background: Engaging in regular physical activity has been proven to have beneficial health effects such as preventing chronic diseases and improving mental health. Recent studies have demonstrated correlations between socio-demographic factors and physical activity levels. This study determined the associations between socio-demographic factors, social determinants of health and the amount of weekly physical activity in patients occupying an urban underserved area.

Methods: This study retrospectively analyzed a dataset generated by St. Mary Medical Center from EPIC™ with demographic characteristics and physical activity levels partitioned by time per week for adult inpatient visits from January 2021 to March 2023. Patients were stratified into physical activity levels based upon published guidelines: inactive (no physical activity), insufficiently active (<150 minutes per week) or sufficiently active (≥150 minutes per week). Data analysis was conducted in SPSS 28.0 using tests of association including Kruskal Wallis H and multivariate ordinal regression model. This study was exempted by Indiana University Human Research Protection Program (IRB # 14040).

Results: The sample of individuals from the dataset who answered physical activity questions was comprised of 1498 patients. There was a statistically significant difference in physical activity level by age group ($p<0.001$), sex ($p<0.05$), insurance category ($p<0.001$), and social connections risk score ($p<0.001$); with race ($p=0.057$) and language ($p=0.054$) approaching significance. Multivariate analysis showed that age was the only significant factor when accounting for all variables, with higher age groups reporting lower proportions of physically active individuals.

Conclusion: Determining how socio-demographic factors influence physical activity levels will direct efforts to form and implement new interventions in the Northwest Indiana urban area and support community health initiatives. This data makes it possible to inform practitioners of the demographics that are at risk of being insufficiently active and having them direct those patients to programs in place to help bridge the lapse.