J Epidemiol Community Health. 2016 Mar;70(3):253-9.

The association between green space and depressive symptoms in pregnant women: moderating roles of socioeconomic status and physical activity.

McEachan R, Prady S, Smith G, Fairley L, Cabieses B, Gidlow C, Wright J, Dadvand P, van Gent D, Nieuwenhuijsen MJ.

Abstract

BACKGROUND: The current study explored the association between green space and depression in a deprived, multiethnic sample of pregnant women, and examined moderating and mediating variables.

METHOD: 7547 women recruited to the 'Born in Bradford' cohort completed a questionnaire during pregnancy. A binary measure of depressive symptoms was calculated using a validated survey. Two green space measures were used: quintiles of residential greenness calculated using the normalised difference vegetation index for three neighbourhood sizes (100, 300 and 500 m buffer zones around participant addresses); access to major green spaces estimated as straight line distance between participant address and nearest green space (>0.5 hectares). Logistic regression analyses examined relationships between green space and depressive symptoms, controlling for ethnicity, demographics, socioeconomic status (SES) and health behaviours. Multiplicative interactions explored variations by ethnic group, SES or activity levels. Mediation analysis assessed indirect effects via physical activity.

RESULTS: Pregnant women in the greener quintiles were 18-23% less likely to report depressive symptoms than those in the least green quintile (for within 100 m of green space buffer zone). The green space-depressive symptoms association was significant for women with lower education or who were active. Physical activity partially mediated the association of green space, but explained only a small portion of the direct effect.

CONCLUSIONS: Higher residential greenness was associated with a reduced likelihood of depressive symptoms. Associations may be stronger for more disadvantaged groups and for those who are already physically active. Improving green space is a promising intervention to reduce risk of depression in disadvantaged groups.