

Abstract

There is growing recognition that the availability of Urban Green Spaces (UGS) may be associated with improved levels of health in the population. Health is, as recommended by the World Health Organization, not just the absence of diseases, but a complete mental and physical wellbeing, determined either by biological and social environment. In recent decades, several studies point to the importance of depressive symptoms in population health. Exposure to UGS has an effect on mental health, but the relationship between access to UGS and depression is less well known. In this work, developed in the context of the EPITeen cohort, the aim is to examine the association between the distances from the residences of 17 years-old adolescents in the city of Porto to the UGS and the presence of depressive symptoms measured by the Beck Depression Inventory (BDI). It was considered the existence of depressive symptoms when the BDI score was ≥ 13 and UGS refers to open areas with the presence of vegetation, such as parks and gardens.

A sample of 1431 (53% female) adolescents living in city of Porto was analyzed. The participants were georeferenced from home addresses and the limits of UGS were obtained from digital maps of the Municipality of Porto of satellite imagery from Google Earth and through the use of Global Positioning Systems (GPS). Each adolescent was classified according to the distance of their residence to the nearest green area into three classes: $\leq 100\text{m}$, $> 100\text{m} \leq 200\text{m}$ and $> 200\text{m}$. The logistic regression analysis was used to investigate the association between distance to the UGS and symptoms of depression (adjusted for parental education and parental depression in both sexes and coefficient of location only for boys).

Analyzing depressive symptoms according to parental education for both sexes, the proportion of adolescents with symptoms of depression was higher among adolescents with parents with secondary education. The prevalence of symptoms of depression was higher in smokers than in non-smokers (56.5% vs 43.5%) ($p < 0.05$). After adjustment, and using as reference the adolescents living within 100 meters of a green area, the OR for girls (95% CI) who had symptoms of depression was $\text{OR} = 1.45$ (0.62; 3.42) when they have the green area at a distance greater than 100m but less or equal to 200m and $\text{OR} = 0.83$ (0.37; 1.85) if the distance was greater than 200m. For boys the results were $\text{OR} = 0.85$ (0.35; 2.09) and $\text{OR} = 0.91$ (0.43; 1.93) respectively.

In this study no significant association was found between the distance to the UGS and symptoms of depression in both sexes.

Key Words: Mental Health; Depression; Urban Green Spaces; Socioeconomic Status; Environmental; Geographic Information System.