



## Does Neighborhood Deprivation Cause Obesity?

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### Dear Editor,

Neighborhood characteristics can affect people's activity. For example, some neighborhood characteristics may cause people to spend more time at home and not perform outdoor activities. Therefore, this may lead to obesity by reducing physical activity and increasing sedentary life and food intake. Research shows that neighborhood characteristics are at least as important as individual characteristics in determining the likelihood of obesity. When the design of a neighborhood hinders physical activity, it causes obesity. In other words, environment structure influences behavior and health outcomes (1). Local parks and walkable neighborhoods are often considered elements of the urban environment that augment physical activity and diminish the risk of obesity. In the study by Stark et al. in New York, extending park space effectively reduced BMI, and neighborhoods with multiple clean parks could affect body mass index (BMI) (2).

Therefore, neighborhood deprivation can be considered a deterrent. Pearson et al. found in a study that higher neighborhood deprivation and lower access to green space were associated with a significant rise in the likelihood of overweight or obesity. Increased access to green space is accompanied by more walking, while the lack of access to green space may decrease the level of walking. Moreover, in this study, neighborhood deprivation was coupled with reduced walking (3). In France, a study found that living in a lower socioeconomic status (SES) was correlated with higher BMI and waist circumference. Conversely, people living in areas with high SES are more satisfied with the safety, public transportation, and access to sports facilities in their community, resulting in a lower risk of obesity. However, physical space alone is not enough, and the impact of environmental factors at the community level, especially the perception of the environment, is more impor-

tant in obesity than the physical environment. A national study on women and children in the United States found that obesity was more prevalent among those who considered their neighborhood insecure (4).

In other words, people's perceptions of social dysfunction and the collective efficacy in the neighborhood may affect the amount of time spent outside the home. Social disturbance is a measure of neighborhood safety that explains threats to neighborhood conditions and abnormal behaviors, such as drug trafficking, criminal offense, and inebriation in public. These activities in a neighborhood may cause people to restrict outdoor activities, and they have to stay in their homes. Therefore, daily energy consumption will decline (5). The social conditions in which people live have a profound effect on their health. Factors such as poverty, poor nutrition, poor housing, unemployment, insecure income, low education, social discrimination, and living in deprived environments are the main determinants of health and health inequality. Medical care can indeed prolong the life or cure a severe illness, while what is essential for population health is the socioeconomic conditions that make people sick or in need of medical care (6).

Collective efficacy is a scale for people to understand connection and closeness with their neighbors (social continuity and confidence) and the neighbors' capacity to participate in activities to benefit the neighborhood to achieve common goals (informal social control). Consequently, low levels of perceived collective efficacy, such as the lack of safety in the neighborhood, may cause people to stay at home. If the neighborhoods are not safe or people do not have a connection with their neighbors, this can lead to increased psychological stress. For some people, if stress is persistent, it may result in functional disturbance through anxiety or depression. These feelings can exacer-

bate isolation and reduce energy consumption in daily life activities or free time, especially outdoor activities. Psychological problems, namely stress, depression, or anxiety, can increase appetite in some people (7).

Characteristics of chain stores, supermarkets, and fast food restaurants are also known as other environmental factors affecting obesity and overweight. In a study by Dubowitz et al., evidence showed that higher distribution and greater access to grocery stores/supermarkets in the neighborhood diminished BMI and, conversely, elevated the frequency of fast food restaurants (8). In a systematic review by Giskes, more access to supermarkets was associated with lower BMI. Another study on 60,775 women aged 59 - 70 years revealed that higher supermarket densities within half a mile of a person's home correlated with lower BMI (9). In another investigation on 10,763 people in four states, the presence of supermarkets near residential complexes was accompanied by a 24% and 9% decline in obesity and overweight, respectively. Living close to grocery stores or supermarkets is coupled with having a proper diet. In addition, it will reduce the risk of obesity and other risk factors for chronic diseases. On the other hand, fast food consumption leads to increased calorie intake, more fat intake, higher BMI, and weight gain (10).

The characteristics and location of grocery stores and supermarkets and their prices are also related to the BMI of customers (7). In his study, Pyko found that exposure to traffic noise could raise the risk of obesity and a significant association between traffic noise and waist circumference. He found that the adverse effects of this noise were greater if it came from variable sources (11). In a study conducted in a Scandinavian urban population, Oftedal found that traffic noise was correlated with obesity indicators in noise-sensitive women. However, in men, the connection was stronger in those whose bedrooms were facing the street (12). As observed, neighborhood characteristics can play a role in the prevalence of overweight and obesity and should be considered in formulating obesity prevention and control policies.

## Footnotes

**Authors' Contribution:** A. Marzban and P. Emami conceived the original idea and designed the project. A. Marzban and M. Modareszadeh collected the data and wrote the manuscript draft. All authors read and approved the final version of the manuscript.

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