

International Journal of Population Data Science

Journal Website: www.ijpds.org



Exposure to diabetes and own diabetes status using a whole population network of the Netherlands

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Diabetes is one of the most common chronic diseases in the Netherlands: approximately 1.2 million people have diabetes, of which 1.1 million have type 2 diabetes. Type 2 diabetes is strongly related to lifestyle factors (e.g. unhealthy eating habits, being overweight and smoking), but also to ageing and it has a genetic component. An individual's social environment may influence their lifestyle (choices), and subsequently their chance of having diabetes. This study examines the relationship between an individual's social environment and diabetes with administrative data from the Person Network of Statistics Netherlands. The Person Network includes five types of relationships (so-called network layers) of each inhabitant of the Netherlands in 2022: household members, (extended) family members, colleagues, neighbours and classmates. Individuals' diabetes status was based on whether they were prescribed

diabetes medication in 2022. An "exposure score" was calculated for each individual indicating to what extent diabetes was present in their (local) network. The exposure score was decomposed to assess the distinct contribution of each network layer to the overall score. The population was limited to individuals aged 40+ years as the prevalence of type 2 diabetes increases rapidly after age 40. Exposure to diabetes was higher for individuals with diabetes than those without. Both before and after adjusting for individual background factors (e.g. age, gender, origin, income, social economic category, household composition, urbanity of the neighbourhood), individuals who had relatively more network members with diabetes were more likely to have diabetes themselves than those with fewer network members with diabetes.

