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Letter to the Editor

Diabetes Care and Complications: A Comparison between Individuals with Disabilities and the General Population

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Dear Editor-in-Chief

A higher prevalence of diabetes among people with disabilities compared to those without disabilities has been documented worldwide (1, 2). Diabetes prevalences of 16% and 23% have been reported among people with disabilities, which are about 2.2 and 1.3 times those among people without disabilities, respectively (1, 3). While the prevalence of diabetes has been studied in people with disabilities, little is known about differences in diabetes control and outcomes among people with disabilities compared to the general population.

This study examined the management of diabetes and its complications among people with disabilities in Korea compared to those without disabilities. This was a retrospective cohort study. Data were acquired from the National Health Insurance database, which provides the claims data for the entire Korean population, including Medical Aid beneficiaries (3%). The claims data of people with disabilities registered with the Korean government in 2009 were collected by 50% random sampling, and an equal number of controls matched for age and sex without disabilities were selected.

Diabetes was defined as two or more outpatient or inpatient visits for diabetes (ICD-10, E10–14). After excluding those who were under 20 years of age, those with missing values, and those who died within a year, individuals with diabetes in 2010 were identified in both cases and controls. Among them, cases of new-onset diabetes in 2010 without previous outpatient or inpatient visits for diabetes in the preceding year were selected. To follow up on diabetes-related complications from 2011 to 2019 in patients with new-onset diabetes in 2010, we excluded those who had used outpatient or inpatient services for cardiovascular (I20–25, I46, I48, and I50), renal (N17–19), or cerebrovascular diseases (G45, I60–67, and I69), which are or may lead to diabetes-associated complications. Cox proportional hazards regression analysis was per-

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formed to calculate the adjusted relative risk of diabetes complications in people with disabilities compared to those without disabilities.

Among 2,429,547 individuals with disabilities registered with the Korean government in 2009, 1,247,593 (51.3%) were identified by random sampling, with an equal number of age- and sex-matched controls without disabilities. After excluding those under the age of 20, those with missing data, and those who died in 2010, 170,319 individuals with disabilities and 124,973 without disabilities were found to have diabetes. The prevalence of diabetes per 100 people with disabilities was 14.1, which was 34.7% higher than that among those without disabilities, at 10.4. Among them, 19,822 and 16,241 cases of new-onset diabetes in 2010 were identified in each group, respectively. The incidence rate of diabetes was 1.9 per 100 people with disabilities, which was 25.3% higher than the rate among those without disabilities, at 1.5.

Diabetes control in the study population in 2011 was as follows. The percentage of people whose medication refill ratio was over 80% was statistically significantly lower among people with disabilities, at 71.0%, compared to people without disabilities, at 74.4%, with an odds ratio of 0.84 (adjusted OR=0.88). When compared by severity, the percentage was the lowest among people with severe disabilities compared to those with mild disabilities and no disabilities. When compared by the type of disability, those with mental disabilities showed a higher percentage of people with medication refill ratios over 80% than people with other types of disabilities and no disabilities. The odds ratio of having an HbA1C test among people with disabilities was 0.95 (adjusted OR = 0.94) compared to those without disabilities.

The odds ratio of having a lipid panel test among people with disabilities was 1.16 (adjusted OR = 1.11) compared to those without disabilities. When compared by severity or type of disability, those with mild disabilities and those with mental disabilities showed the highest likelihood of having the test compared to the other groups. No significant difference was found in the percentage of people with and without disabilities who had fundoscopy. When compared by severity, those with mild disabilities had a higher likelihood of having a fundoscopy.

The odds ratios of developing complications during 2011–2019 among people with disabilities compared to those without were as follows. People with diabetes and disabilities were about 50% more likely to develop kidney disease, and the odds ratios were higher among those with severe disabilities. While those with mental disabilities were less likely to develop kidney disease, they showed a higher odds ratio after adjustment. People with diabetes and disabilities were about 50% more likely to develop stroke, and the odds ratios were higher among those with severe disabilities. Regarding death, people with disabilities also showed a higher likelihood, about 1.5 times that of those without disabilities. While those with mental disabilities showed a lower likelihood of death compared to those without disabilities, they showed a higher odds ratio after adjustment.

People with disabilities were likely to put less effort into managing diabetes mellitus and, apart from their higher prevalence of diabetes, were more likely to experience its complications. Higher odds of complications, which persisted after adjusting for disease management, suggest that there are other factors that make them vulnerable to complications. The inherent vulnerabilities to chronic conditions and their complications among people with disabilities demonstrate the need for more intensive support and care.

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Conflicts of Interest

The authors have no potential conflicts of interest to disclose.

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