

COMMENTS AND RESPONSES

Accuracy of Administrative Coding for Type 2 Diabetes in Children, Adolescents, and Young Adults

Response to Rhodes et al.

In a recent study, Rhodes et al. (1) questioned the accuracy of administrative coding for type 2 diabetes in children and young adults, noting a very low positive predictive value (PPV) of 16.6%. The article also highlighted the importance of adopting standardized and validated diagnostic protocols in epidemiologic studies.

Using diagnostic criteria from the American Diabetes Association (ADA) (2), we assessed the validity of self-reported diabetes diagnosis in a cohort of 39,876 women aged ≥ 45 years who were without heart disease, stroke, or cancer at baseline, as previously described (3). In annual, longitudinal, follow-up waves, all participants were requested to report repeated and updated diabetes status via a standardized protocol that was applied in a blinded manner to the full cohort. Several approaches were used to validate self-reports, including physician-led telephone interviews of 473 women (446 responders) who self-reported diabetes (4), supplemental questionnaires requesting detailed diagnostic information mailed to a separate random sample of 147 women who self-reported diabetes (136 responders), and medical records that were obtained (86% available) from

consenting women ($n = 113$) in the former two groups.

In our validation study, self-reported diabetes was confirmed in 406 women via physician-led telephone interviews (91% PPV [95% CI 88–94%]), whereas 124 cases were confirmed (91% [86–96]) using the supplemental questionnaire. In addition, 89 of the 90 women who provided medical records had confirmed diabetes using criteria of the ADA (positive self-report plus supplemental questionnaire vs. medical records, 99% PPV [95% CI 97–100]). The results also found that the ADA criteria identified 12% more cases than the National Diabetes Data Group criteria and 6% more cases than the World Health Organization criteria.

Our findings indicate that the PPV of self-reported diabetes was very high in this cohort of adult women, which is in contrast to the 16.6% PPV for administratively coded type 2 diabetes among children and young adults (1). The PPVs in our study also did not differ by methods used (PPV 91% for both methods, $P = 0.96$), thereby attesting to the validity and robustness of self-reported diagnostic information. Even in sensitivity analysis conservatively categorizing all nonresponders as nondiabetic individuals, PPVs remained robust and high at 86 and 84% via the two primary validation approaches (physician-led telephone interviews and the supplemental questionnaire, respectively).

In contrast with administrative coding of type 2 diabetes reported by Rhodes et al., a standardized approach to annual assessment of self-reported type 2 diabetes yields excellent predictive ability and validity in a well-characterized cohort.

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