This research was supported by...

Introduction

Diabetes is an epidemic in the US and worldwide, with enormous public health implications. Currently, there are approximately 20.8 million Americans with diabetes, including 2.6 million who are undiagnosed. An estimated 60 to 70 million people in the US have prediabetes, the condition that raises the risk of type 2 diabetes, heart disease, and stroke. In 2010, Americans with all stages of diabetes spent an estimated $237 billion on medical care, including $212 billion for diabetes alone. Of the 20.8 million people with diabetes, 5.7 million have type 1 diabetes and 15.1 million have type 2 diabetes. While type 1 diabetes is usually diagnosed at a younger age, type 2 diabetes usually becomes apparent in middle age and later. The prevalence of diabetes is rising worldwide; the 2007 International Diabetes Federation (IDF) estimate was that 243 million adults have diabetes, corresponding to a prevalence of 3.8%.

Methodologies

SHIELD (the Study to Help Improve Early Detection and Management of Risk Factors Leading to Diabetes) is a large, longitudinal survey of US adults. SHIELD used a 12-item screener questionnaire to identify risk factors for diabetes diagnosis and to sample cohorts with or without diabetes. The SHIELD Study was designed to evaluate the feasibility of identifying high-risk populations through primary care screening. Since no validated, large-scale studies evaluating systematically the performance of risk factors in primary care for earlier identification of those at risk and/or better screening to identify and manage diabetes exist, the SHIELD Study Group performed one of the largest efforts to test the performance of a variety of risk factors in primary care.

Methods

SHIELD - ShIELD, a 5-year, national, longitudinal study of diabetes, CVD, and diabetes-related risk factors in US adults.

Methods

- Candidate risk factors included in the screener were based on the literature, national guidelines and expert opinion. To determine the occurrence of these risk factors, respondents were asked height, weight/obesity, and answered for up to 4 adult members of the household.
- A diagnosis of diabetes was reported by 17,375 respondents (8.2%), with most (12,466 or 61.3%) having type 2 diabetes and 4,909 (28.2%) having type 1 diabetes.
- As of the first phase of the longitudinal SHIELD study, a questionnaire was developed by a panel of diabetes healthcare experts (the SHIELD Study Group).
- Logistic regression analyses determined which BMI and waist circumference thresholds were most predictive of diabetes diagnosis in the past 36 months. These measures were used to determine whether "high-BMI" and "abdominal obesity" were present.

Limitations

- The household participating in the TNS NFO panel had culturally oriented data to report, so the results may not be generalizable.
- Household panels tend to underrepresent the very wealthy and very poor segments of the population and do not include rural or institutionalized individuals.

Conclusions

- The SHIELD screener questionnaire was a useful tool to identify individuals with risk factors that could indicate future diabetes diagnosis.
- Consumer panel surveys may represent an economical and relatively alternative method for identifying populations with conditions or diseases.

References