ABSTRACT

OBJECTIVES: Maintaining glycemic control for patients with type 1 diabetes (T1D) is associated with a reduced risk of future complications. Proper patient awareness of glycated hemoglobin level (HbA1c) is important to facilitate adherence and improve outcomes. The study profile how HbA1c awareness has changed over time and the consequences of poor awareness.

METHODS: Data from the US National Health and Wellness Survey (NHWS) from 2006 (n=62,834) to 2013 (n=75,000) were used in the analysis. The NHWS is an annual, cross-sectional survey fielded to match the demographic characteristics of the US adult population, as noted by the US Census Bureau’s Current Population Survey. The NHWS with chi-square analysis was used to compare the demographic characteristics of the NHWS (ranging from n=6,880 in 2006 to n=7,852 in 2013).

RESULTS: Levels of awareness were reported descriptively for each year of the NHWS. Awareness of HbA1c has increased over time, though appears disproportionately higher among patients of high socioeconomic status and higher risk (i.e., those with complications and poorer health utilities (0.70 versus 0.68), more overall work impairment (17.9% versus 20.8%), and more hospitalizations in the past six months (9.3 M; n=3,040; all p<.05) (Table 1). Differences between those who were aware versus unaware were made with respect to health status, WPAI measures of health status. Absenteeism, presenteeism, overall work impairment, and Physical Component Summary (PCS) scores from the Short Form 36v2), work productivity loss (using the WPAI Health scale (WPAI-2), presenteeism, and work productivity loss (using the WPAI

CONCLUSIONS: Awareness of HbA1c has increased over time, though appears disproportionately higher among patients of high socioeconomic status and higher risk (i.e., those with complications and poorer health utilities (0.70 versus 0.68), more overall work impairment (17.9% versus 20.8%), and more hospitalizations in the past six months (9.3 M; n=3,040; all p<.05) (Table 1). Differences between those who were aware versus unaware were made with respect to health status, WPAI measures of health status. Absenteeism, presenteeism, overall work impairment, and Physical Component Summary (PCS) scores from the Short Form 36v2), work productivity loss (using the WPAI

OBSERVATIONS

• Among patients with type 2 diabetes (T2D), maintaining glycemic control can aid in the prevention of future microvascular and macrovascular complications. For most patients, current guidelines recommend target glycated hemoglobin level (HbA1c) of <7.0. For other patients, it is more stringent target of <6.5% is recommended.

• Proper awareness of HbA1c level and targets is important to improve health outcomes. Yet, it's unclear to what extent patients are aware of their HbA1c level and how awareness has changed over time.

METHODS

Data Source

For this analysis, data were taken from the 2006-2013 US National Health and Wellness Survey (NHWS) (n=62,834 to n=75,000 in each year). The NHWS is an annual, cross-sectional survey fielded to match the demographic characteristics of the US adult population. Results were weighted and projected to match the demographic composition of the US adult population, as noted by the US Census Bureau’s Current Population Survey.

Sample

Patients who reported a diagnosis of T2D were included in the analysis for each year of the NHWS (ranging from n=6,880 in 2006 to n=7,852 in 2013).

Measures

• Awareness: T2D patients were characterized by their level of awareness of their HbA1c level. Reported an HbA1c value or range: those who reported a ‘don’t know’ answer were excluded.

• Demographics and Patient Characteristics: Age, gender, race/ethnicity, household income, education, diabetes treatment, and diabetes complications were all assessed for diabetes management.

• Health Outcomes: The Mental Component Summary (MCS) and Physical Component Summary (PCS) scores from the Short Form-36 (SF-36) were included as measures of health status. Absenteeism, presenteeism, overall work impairment, and work impairment matrix from the Work Productivity and Activity Impairment-General Health Scale (WPAI-GH) were used as measures of indirect costs. The number of healthcare resource events in the past six months was also reported.

Statistical Analysis

• Levels of awareness were reported descriptively for each year of the NHWS.

• Comparisons were made between those who were aware of their HbA1c versus those who were unaware with respect to demographics and patient characteristics for each year of the NHWS.

• Logistic regression model (i.e., generalized linear model) was used to compare those who were aware and unaware with respect to health status, WPAI-GH, and healthcare resource utilization.

• Additional analyses assessed for diabetes management.

RESULTS

• Overall awareness of HbA1c level among T2D patients has improved over time, from 26.6% being aware of their level (t=0.06) to 56.0% in 2013 (p<0.05) (Figure 1).

• In 2013, patients who were aware (12.7 M; n=4,608) were more likely to be older (65.5 versus 57.2 years), non Hispanic white (71.4% versus 61.1%), treating with oral/insulin/non-insulin injectable (87.8% versus 76.1%), and more likely to have had diabetic complications compared with those who were unaware (31.4 M; n=4,032; all p<0.05) (Table 1).

• Additionally, patients who were aware were more likely to be college educated and have higher household income (<50K; p<0.05) compared with those who were unaware (Table 1).

• These demographic, treatment, and comorbidity patterns have remained fairly consistent from 2006 through 2013 (results from 2006-2013 are not shown). Of note, awareness was inversely associated with the proportion of patients aware of their HbA1c level who have Hispanic which has increased from 0.80 (2006) to 0.85 (2012) (Table 1).

• Interestingly, the proportion of patients aware of their HbA1c level who have Hispanic has increased from 0.80 (2006) to 0.85 (2012) (Table 1).

CONCLUSIONS

• Patients who are aware are less likely to be treated and also had fewer physicians than patients who are unaware, yet more physician consultations, suggesting disease is not being properly managed.

• These awareness and knowledge of HbA1c level have societal benefits in terms of reduced costs as well as improved health outcomes for patients.

References
