The Incremental Burden of Obesity and Sleep Disorders Among Individuals With Type 2 Diabetes Mellitus

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ABSTRACT

Objectives: Diagnoses of obesity and sleep disorders (SD) are common among the adult population. SD is a major risk factor for developing T2DM, and obesity is a risk factor for SD. The objective of this study was to examine the incremental burden of obesity and SD in patients with T2DM.

Methods: Data were extracted from the 2012 US National Health and Wellness Survey (NHWS). A total of 21,180 T2DM adults (n=7,066) were included in this study. Patients were stratified to T2DM with obesity, T2DM with SD, T2DM with obesity and SD. Respondents provided information on age, gender, ethnicity, household income, insurance status, comorbidity burden, and other characteristics. Demographic and health status data were used to calculate a comorbidity burden score using the Charlson Comorbidity Index (CCI). Results were analyzed using Chi-square tests and p<0.05.

Results: The average age of respondents was 60.0 years (SD=12.2); 60.5% were male, 76.3% were Caucasian, 36.4% were non-Hispanic white, 27.1% were married/living with partner, and 64.1% had less than college education. Among respondents with T2DM (n=7,066), 63.0% were obese, 24.4% had SD, and 17.4% had obesity and SD. Former research found sleep disorders to be a possible risk factor for developing obesity and T2DM.

CONCLUSIONS

Among employed respondents, absenteeism, presenteeism and overall work impairment increased with the addition of obesity and/or SD after adjusting for comorbidities. Obesity and/or SD increased 2.0% daily work impairment.

LIMITATIONS

● All data from the NHWS are self-reported. Therefore, these may be biased in the nature of the variables.

● The cross-sectional nature of the NHWS limits the inferences that can be made about causality.

● The survey was not randomized and thus may not be representative of the entire US population of adults with T2DM.

● Caution in interpretation of the findings presented in this study should be exercised.

Table 1: Respondent Characteristics and Demographics by T2DM, Obesity and SD Groups

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>T2DM Only (n=2,088)</th>
<th>T2DM with Obesity (n=2,253)</th>
<th>T2DM with SD (n=1,925)</th>
<th>T2DM with Obesity and SD (n=1,333)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>60.0 ± 12.2</td>
<td>60.0 ± 12.2</td>
<td>60.0 ± 12.2</td>
<td>60.0 ± 12.2</td>
<td>&lt;0.05</td>
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<tr>
<td>Gender (%)</td>
<td>60.5%</td>
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<tr>
<td>Ethnicity (%)</td>
<td>76.3%</td>
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<tr>
<td>Education (%)</td>
<td>45.2%</td>
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<td>Employment (%)</td>
<td>43.1%</td>
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<tr>
<td>Income (%)</td>
<td>0.0%</td>
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</tbody>
</table>

*Note: All p-Values are presented; p<0.05 indicates that at least one group differs significantly from another.

Figure 1: Respondent Health Status by T2DM, Obesity, and SD Groups

Figure 2: Respondent Health Utilities by T2DM, Obesity, and SD Groups

Figure 3: Respondent Work and Activity Impairment by T2DM, Obesity, and SD Groups

Figure 4: Respondent Resource Utilization by T2DM, Obesity, and SD Groups

REFERENCES


