Health-Related Quality of Life is Lower for Patients with Diurnal and Nocturnal GERD Symptoms

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Background
• Gastro-esophageal reflux disease (GERD) is a chronic, highly prevalent condition (affecting 15%-20% of U.S. adults) characterized by acid reflux from the stomach into the esophagus and resulting in symptoms such as heartburn.1
• Severe, frequent GERD symptoms can be associated with esophageal cancers.3
• Proton pump inhibitors are the primary form of prescription medication used to treat GERD.
• GERD symptom severity and timing (especially nocturnal symptoms) have been associated with poorer health-related quality of life and other health outcomes.4,5
• However, there is little evidence for the combined burden of having GERD symptoms both during the day (diurnal) and at night (nocturnal), versus having diurnal or nocturnal symptoms alone.

Objective
• The current study was undertaken to clarify the relationship between the timing of GERD symptoms and the burden of GERD in terms of health-related quality of life (HRQoL).
• Specifically, the study assessed whether HRQoL differed between respondents diagnosed with both diurnal and nocturnal GERD and those diagnosed with either type alone, or non-diagnosed GERD respondents.

Methods
Sample and Procedure
• Data were analyzed from Kantar Health’s 2010 National Health and Wellness Survey, a nationally representative dataset of U.S. adults (collected over three waves, January 7 to August 13).
• There were 75,000 respondents, broken up into mutually exclusive groups depending on whether and when they experienced GERD symptoms: non-GERD (n = 68,963, 91.5%), diurnal-only (n = 7,013, 9.3%), nocturnal-only (n = 1,493, 2.0%), and diurnal-and-nocturnal GERD (n = 4,403, 5.9%).

Outcome variables included components of the Short Form 12-item (SF-12v2) HRQoL questionnaire:7
• The mental component summary (MCS) scores, each ranging from 0-100, with lower scores indicating worse health status.
• The physical component summary (PCS) scores, each ranging from 0-100, with lower scores indicating worse health status.
• Covariates included:
  - Gender (reference = male), age, race/ethnicity (reference = Caucasian), BMI (reference = normal weight), Charlson comorbidity index (excluding ulcers, (CCCI)8, and taking a prescription medication for GERD (reference = no GERD prescription).

Statistical Analysis
• Analyses of covariance (ANCOVAs) predicted MCS, PCS, and SF-6D from the four GERD groups (diurnal-and-nocturnal vs. diurnal, nocturnal, or non-GERD) and a range of covariates.

Results
• Estimated means adjusted for the following covariates at levels shown: gender (48% female), age (48.2 years old), income: $25k to $50k (27%), $50k to $75k (25%), $75k + (27%), and declined to answer income (15%); insured (83%); prescription coverage (75%); high school-and-above (80%); African American (11%); Hispanic (6%); other race (9%); BMI: underweight (2%), overweight (32%), obese (33%), and declined to answer BMI (2%); married/living with partner (59%); divorced/widowed/separated (18%); adjusted CCI (0.397); and taking a prescription for GERD (6%).
• The diurnal-and-nocturnal GERD group exhibited significantly lower MCS (Figure 1), PCS (Figure 2), and health utilities (Figure 3) scores than any of the other groups, all p < 0.001.
• The statistically significant decrements in mental and physical quality of life among diurnal-and-nocturnal vs. non-GERD patients meet the generally accepted criteria for clinical significance.5,6,7,8

Figure 1. Mental Component Summary (MCS) Mean Scores, Adjusted for Covariates

<table>
<thead>
<tr>
<th></th>
<th>Diurnal &amp; Nocturnal</th>
<th>Diurnal</th>
<th>Nocturnal</th>
<th>Non-GERD</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS</td>
<td>47.49</td>
<td>47.43</td>
<td>48.56</td>
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</table>

Figure 2. Physical Component Summary (PCS) Mean Scores, Adjusted for Covariates

<table>
<thead>
<tr>
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<th>Nocturnal</th>
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<tbody>
<tr>
<td>PCS</td>
<td>47.60</td>
<td>47.64</td>
<td>47.39</td>
<td>48.55</td>
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</table>

Figure 3. Health utilities (SF-6D) Mean Scores, Adjusted for Covariates

<table>
<thead>
<tr>
<th></th>
<th>Diurnal &amp; Nocturnal</th>
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<tr>
<td>SF-6D</td>
<td>0.73</td>
<td>0.73</td>
<td>0.75</td>
<td>0.71</td>
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</tbody>
</table>

Conclusions
• Based on this analysis, respondents with both diurnal and nocturnal GERD suffer poorer HRQoL than those with no GERD, or only diurnal or nocturnal GERD.
• The current study, unlike previous ones, explored the difference in HRQoL associated with varied timing of symptoms, rather than looking only at nocturnal symptoms as part of a more severe form of GERD. This is noteworthy in that a relatively heavy and clinically meaningful decrement in HRQoL was found for those who have both diurnal and nocturnal GERD, versus those with no GERD.
• Given the prevalence of GERD, the humanistic costs of such decrements in HRQoL are substantial, and this study suggests an unmet need to improve medical care, especially for those who experience both diurnal and nocturnal GERD.

Limitations
• Study results were based on cross-sectional, patient-reported data and may reflect recall biases and other forms of measurement error.
• Although the NHWS is generally representative of the U.S. population, the specific sample of GERD sufferers analyzed in the current study may differ in meaningful ways from the U.S. GERD population.

References

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