Factors associated with sleep disturbance as individuals diagnosed with colorectal cancer (CRC) transition to early survivorship

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Background

• CRC 3rd most common adult cancer in the US
• Sleep disturbance associated with:
  – decreased cognitive functioning
  – fatigue
  – increased healthcare utilization
• Sleep disturbance is a risk factor for:
  – cardiovascular disease
  – infectious diseases
  – depression
• Individuals diagnosed with CRC manage unique consequences of the disease, such as bowel control issues, as well as more general QoL issues such as fatigue, anxiety, pain and nausea.
• Yet, sleep is not often discussed with clinicians

Winkelman 2015; Roscoe 2007; Manocchia 2001; Flynn 2010; Irwin 2015; Engstrom 1999
Purpose

• To identify patient, disease, and treatment characteristics associated with sleep disturbance (and change in sleep disturbance) in a sample of individuals diagnosed with stage I, II or III CRC.
  – Etiology of sleep disturbance may vary from patient to patient: investigated variation in patient, disease, and treatment characteristics within levels of sleep disturbance severity and magnitude of change in sleep disturbance in early survivorship.
Study Design (n = 734)

(Jensen, King-Kallimanis et al. 2016; Amer College of Surgeons Quality of Care Measures; Kang 2013)
Relevant Variables from MY-Health

Patient Characteristics
- Age at diagnosis
- sex
- ethnicity
- race
- job status
- parent

Cancer and treatment history
- Months since CRC diagnosis
- Months since surgery
- Months since chemotherapy

Diagnosis of comorbid conditions
- heart conditions
- respiratory conditions
- diabetes
- joint disease
- psych disorders

HRQOL and Symptoms
- PROMIS Pain Interference
- PROMIS Depression
- PROMIS Anxiety
- PROMIS Fatigue
- FACT-G nausea item

Primary outcome
- PROMIS Sleep Disturbance

(Jensen, King-Kallimanis et al. 2016)
Patient Characteristics at Month 10  
(n = 613)

• Age at diagnosis  
  – mean = 62  
  – range: 22 to 84  
• PROMIS Sleep Disturbance  
  – mean = 50.6  
  – Range: 30 to 75  
• 53% female  
• Race/ethnicity  
  – 55% white  
  – 19% black  
  – 27% Other/multiple  
• Month 17 – loss to follow-up  

![Bar chart showing percentage of sample by stage]

- Stage I: 29%  
- Stage II: 31%  
- Stage III: 40%
Cross-sectional Month 10 Model (n = 613)

• 2 or more comorbid conditions (ref = no comorbid conditions): $B = 1.53$, $p = 0.046$

• Retired (ref = working/student): $B = -2.49$, $p = 0.004$

• PROMIS Anxiety: $B = 0.22$, $p < 0.001$

• PROMIS Fatigue: $B = 0.29$

• PROMIS Pain Interference: $B = 0.09$, $p = 0.017$
Results: Change Model
[Month 10 to Month 17]
(n = 361)

• PROMIS Anxiety Change: $B = 0.14$, $p = 0.002$
• PROMIS Fatigue Change: $B = 0.20$, $p > 0.001$
• PROMIS Sleep Disturbance at Month 10: $B = -0.21$, $p < 0.001$
• 373 patients lost to follow-up. Patients who participated in the second data collection were more likely to:
  – Be a minority (Asian, American Indian or Alaska Native, Asian Hawaiian or Pacific Islander, Other, combination of races)
  – Retired
Conclusions

• Confirmed relationships among fatigue, anxiety and pain, and sleep disturbance in CRC sample

• Small coefficients; screening may be warranted

• Future research should evaluate sleep disturbance at other windows of time during the cancer continuum
Thank you!

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References