

Background

- Breast cancer survivors, including those with advanced disease, are at risk for substantial sleep disturbance, which can negatively affect quality of life
- Sleep disturbance can be exacerbated by co-occurring emotional concerns such as depressive symptoms and anxiety
- Prior research has focused on linkages between sleep disturbance and emotional concerns among individuals with early stage disease, with limited emphasis among those with advanced disease

Aims

- The objective of this study was to examine sleep disturbance and its correlates among breast cancer survivors with and without metastatic disease

Methods

- 163 metastatic (MBC) and 439 breast cancer (BC) survivors enrolled in the Cancer Support Community's online Cancer Experience Registry, provided socio-demographic information, and reported cancer-related distress (CancerSupportSource®) and levels of pain interference and sleep disturbance (PROMIS-29 subscales)
- Risk for clinically significant anxiety and depression was assessed using validated CancerSupportSource risk screening subscales
- Associations between risk for clinically significant depression and anxiety, pain interference, and worse sleep disturbance, adjusting for metastatic disease, treatment history, and number of comorbidities were explored with multivariate regression

Participants

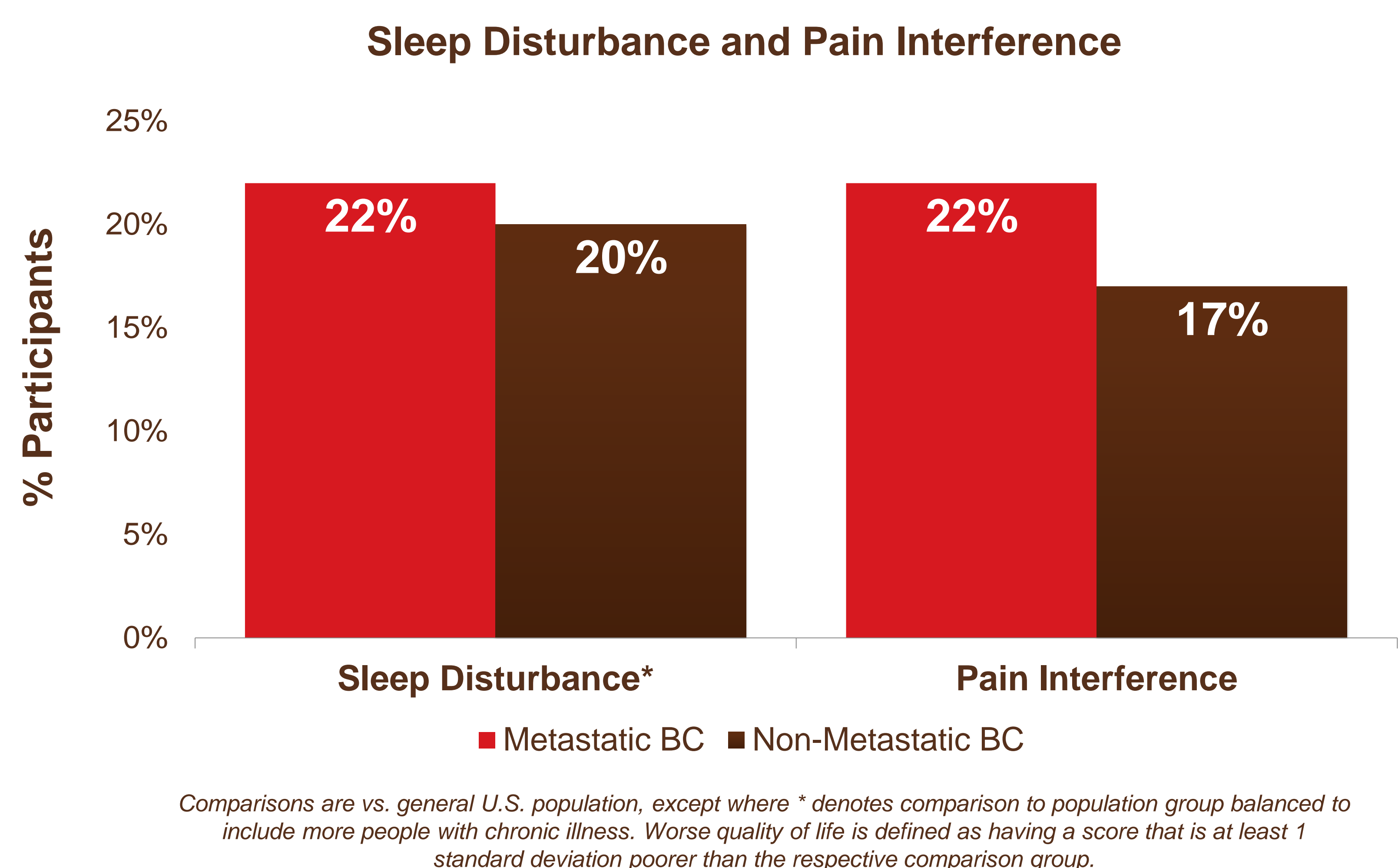
	Metastatic		Non-Metastatic	
	M/n	SD/%	M/n	SD/%
Age (years)	54	10	56	11
Range: 26 – 79				
Non-Hispanic White	137	85%	361	83%
Time Since Diagnosis				
<5 years	93	57%	309	71%
>= 5 years	70	43%	128	29%
Treatment History				
Surgery	128	79%	420	96%
Chemotherapy (past)	59	36%	293	51%
Chemotherapy (current)	79	48%	70	16%
Radiation therapy (past)	76	48%	177	41%
Radiation therapy (current)	21	13%	48	11%
Hormonal (past)	28	18%	57	13%
Hormonal (current)	82	52%	161	38%
At diagnosis, 8% of Non-Metastatic respondents were stage 0, 34% stage I, 40% stage II, and 13% stage III				

Acknowledgments
This work is sponsored by Celgene Corporation (inaugural sponsor), Amgen Oncology, Pfizer Oncology, Genentech, and Novartis.

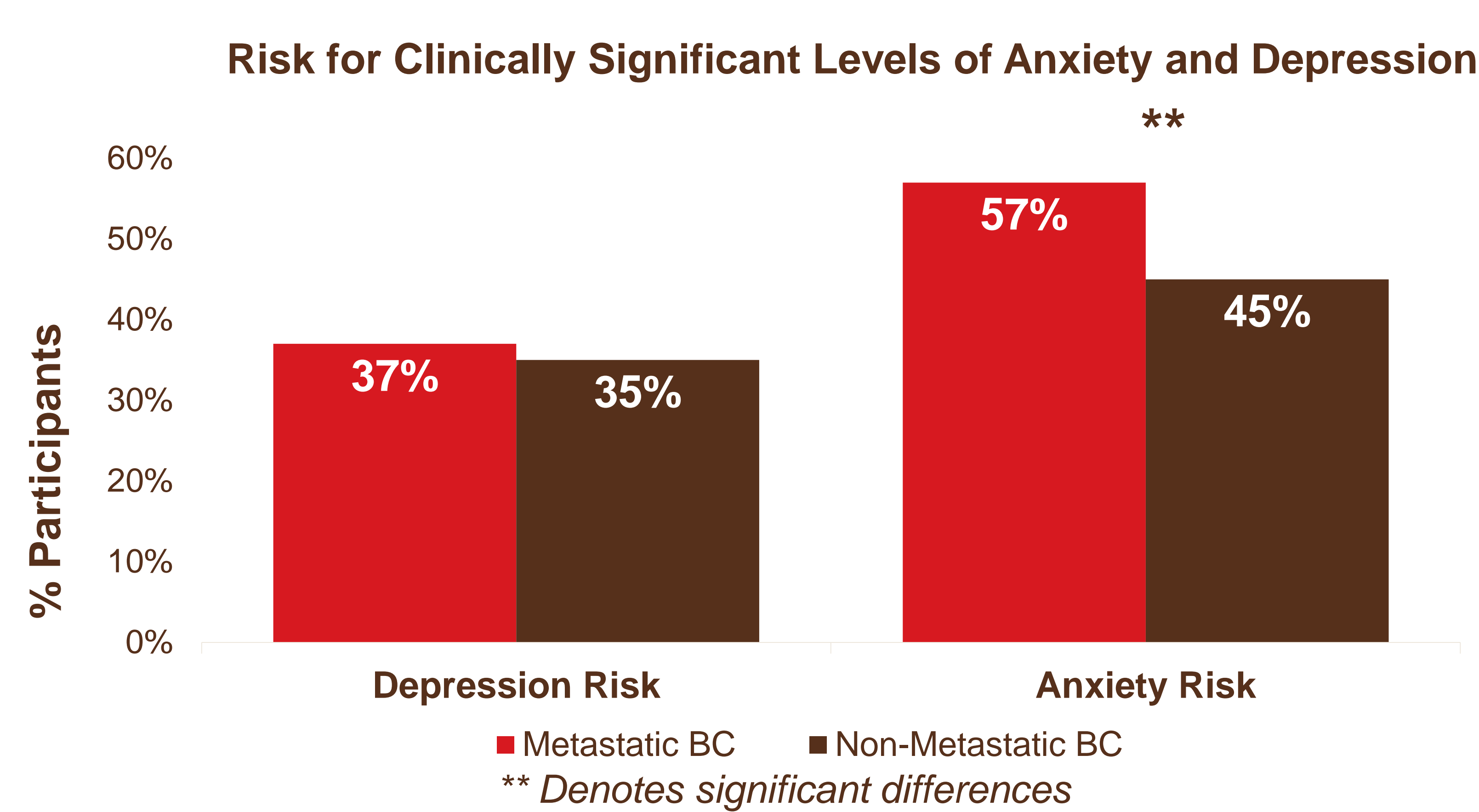
References

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Results



- 20% of participants (metastatic and non-metastatic combined) reported a level of sleep disturbance that was significantly worse than the U.S. population average
- 18% of participants (regardless of metastatic status) reported a level of pain interference that was significantly worse than the U.S. population average
- These responses did not significantly differ by metastatic history



- 48% of participants (metastatic and non-metastatic combined) were identified as at risk for clinically significant levels of anxiety, and 36% at risk for clinically significant levels of depression
- Participants with MBC were more likely to be at risk for clinically significant levels of anxiety ($\chi^2=6.95$, $p<.01$)
- Depression risk did not significantly differ between MBC and BC survivors

Bivariate Associations with Sleep Disturbance		
	<i>r</i>	<i>p</i>
Radiation Therapy	.11	<.01
Number of comorbid conditions	.36	<.001
Depression risk	.37	<.001
Anxiety risk	.34	<.001
Pain interference	.44	<.001

** Significant associations only displayed*

- Greater sleep disturbance was associated with having ever received radiation therapy, greater number of reported comorbidities, greater pain interference, and risk for clinically significant depression and anxiety

Greater Pain Interference and Risk for Clinically Significant Levels of Depression and Anxiety are Associated with Greater Sleep Disturbance			
Predictor	<i>t</i>	Semipartial <i>r</i>	<i>p</i>
Depression risk	3.23	.12	<.001
Anxiety risk	2.43	.09	<.05
Pain interference	6.33	.23	<.000

$R^2=.26$, $F(4,561)=48.18$, $p<.001$

** Significant associations only displayed; associations controlled for metastatic status, treatment history, and number of comorbid conditions*

- In multivariate analysis, risk for clinically significant levels of depression and anxiety, and greater pain interference remained associated with greater sleep disturbance after controlling for treatment history, metastatic status, and number of comorbidities

Implications and Conclusions

- Being at risk for clinically significant levels of depression and anxiety and experiencing greater pain interference are associated with worse sleep disturbance among breast cancer survivors across the illness trajectory, whether or not their breast cancer has metastasized
- Health care providers are encouraged to discuss with patients how they can address sleep disturbance concerns, including referrals to integrative therapies that address the constellation of affective, pain, and sleep symptoms