

Chemotherapy-Induced Peripheral Neuropathy and Quality of Life Among Breast Cancer Survivors

Alexandra K Zaleta PhD, Melissa F Miller PhD MPH, James Johnson MPH CPH, Shauna McManus BS, Joanne S Buzaglo PhD

Cancer Support Community, Research and Training Institute, Philadelphia PA

Background

- Breast cancer survivors are at risk for long-term chemotherapy-induced peripheral neuropathy (PN), which has few treatment options and can affect quality of life

Aims

- The objectives of this study were to 1) examine the presence and severity of PN and its correlates among metastatic (MBC) and breast cancer (BC) survivors who received chemotherapy, and 2) examine provider communication, preparation, and confidence in managing treatment side effects (SEs)

Methods

- 442 metastatic (MBC) and 238 breast cancer (BC) survivors, enrolled in the Cancer Support Community's online Cancer Experience Registry, reported history of chemotherapy-induced PN and how disruptive (0=*not at all*; 4=*very much*) PN was to daily life. Participants also reported cancer-related distress (CancerSupportSource®), quality of life (PROMIS-29), and their experiences communicating about SEs with their health care team
- Associations between PN history, PN disruption, distress, risk for depression/anxiety, and worse quality of life (PROMIS subscales >1SD from norms), adjusting for metastatic disease and number of comorbidities were explored with multivariate linear and logistic regression
- Associations between PN disruption and health care team communication about managing SEs were also examined

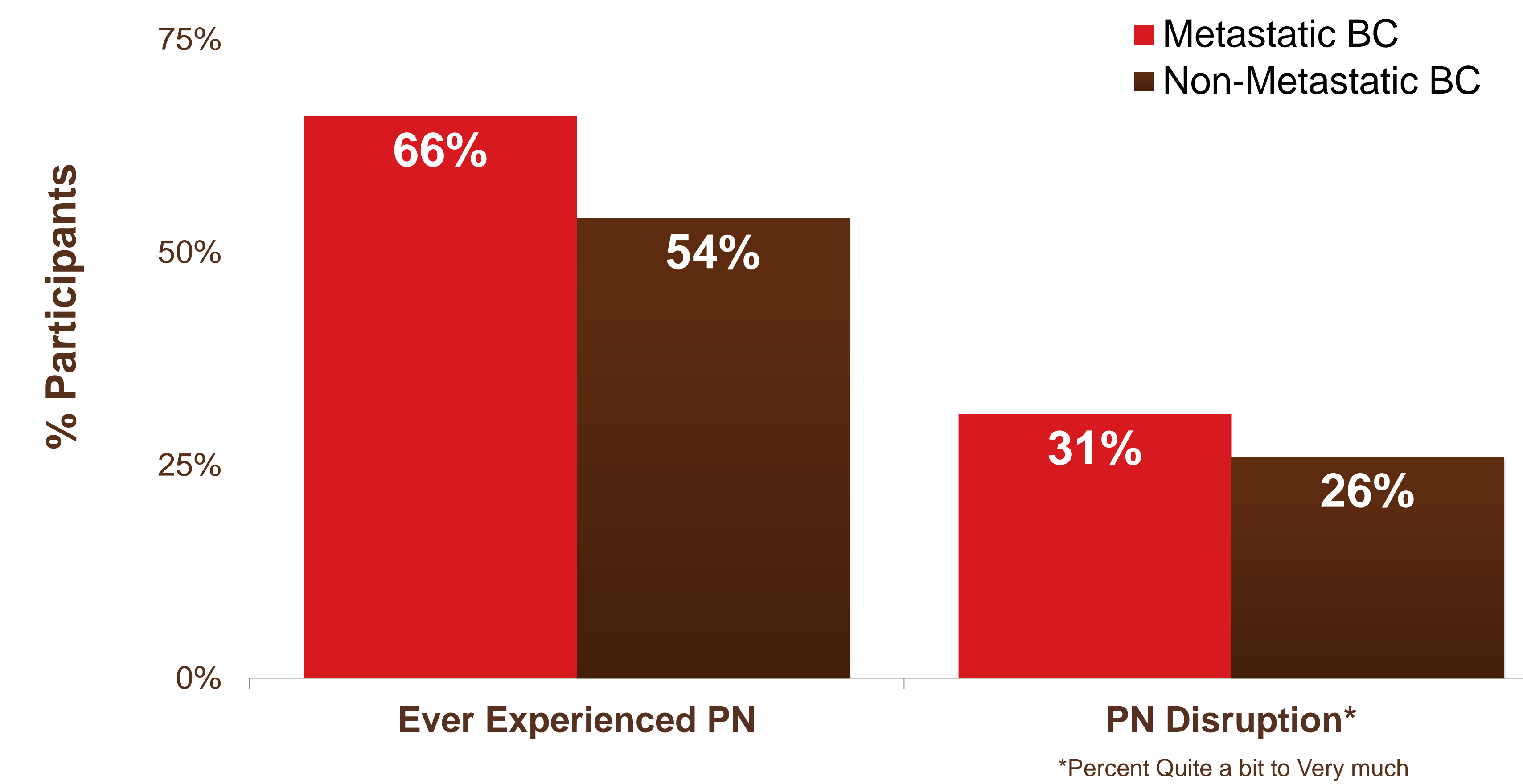
Participants

	Metastatic		Non-Metastatic	
	M/n	SD/%	M/n	SD/%
Age (years)	55	10	55	10
	Range: 24 – 81		Range: 32 – 82	
Non-Hispanic White	395	90%	207	87%
Time Since Diagnosis				
<5 years	170	38%	155	65%
>= 5 years	271	62%	82	35%
Treatment History				
Surgery	380	99%	227	96%
Chemotherapy (past)	442	100%	238	100%
Chemotherapy (current)	14	47%	56	24%
Radiation therapy (past)	332	97%	138	60%
Radiation therapy (current)	1	3%	10	5%
Hormonal (past)	317	97%	107	48%
Hormonal (current)	12	40%	76	36%

At diagnosis, 2% of Non-Metastatic respondents were stage 0, 25% stage I, 52% stage II, and 21% stage III.

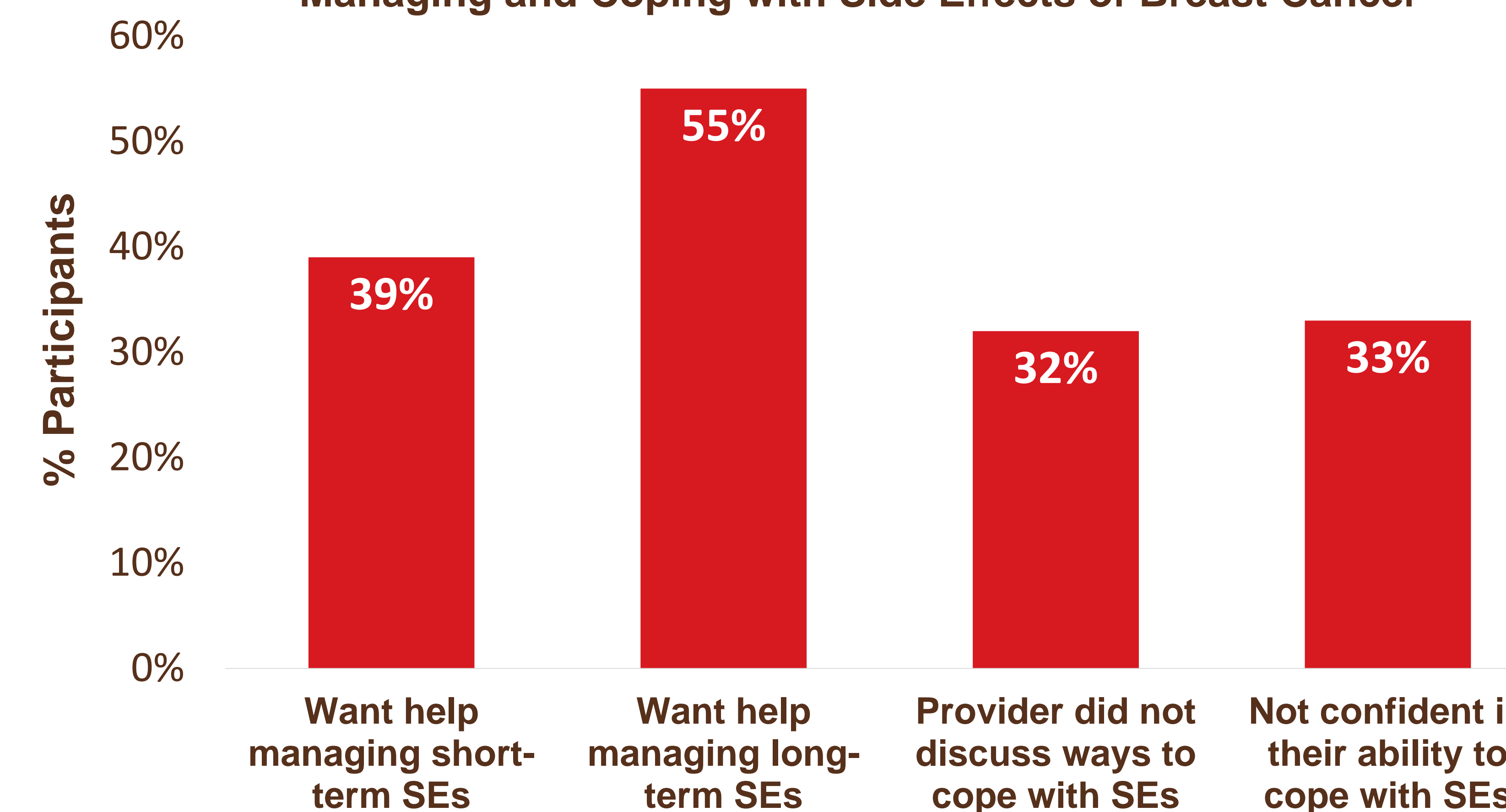
Results

Experience with Chemotherapy-Induced Peripheral Neuropathy



- Metastatic BC survivors were more likely to have experienced peripheral neuropathy than non-metastatic BC survivors (66% vs. 54%, respectively, $\chi^2(1,680)=8.87, p<.01$)
- However, among survivors ever experiencing neuropathy, there was no significant difference as to how disruptive peripheral neuropathy was to daily life, with over a quarter of metastatic and non-metastatic survivors both reporting "quite a bit" to "very much" disruption

Managing and Coping with Side Effects of Breast Cancer



- Many survivors wished they received more help managing short-term side effects (39%) and long-term side effects (55%)
- Nearly one-third (32%) noted their provider had not suggested ways to cope with side effects and 33% were not confident in their ability to cope with side effects
- Wanting help managing short- and long-term side effects, provider not discussing ways to cope with side effects, and lack of confidence in ability to cope with side effects were all significantly associated with PN disruption at a bivariate level

Distress and Quality of Life are Associated with Peripheral Neuropathy History and Disruption

	R ² /McFadden's R ²	p
Ever Experienced PN		
Distress	.17	<.001
Risk for depression/anxiety	.06	<.001
Sleep disturbance	.16	<.001
Pain interference	.24	<.001
Physical function	.22	<.001
Social function	.12	<.001
Depression	.07	<.05
Fatigue	.09	<.001
Anxiety	.07	<.005
PN Disruption		
Distress	.17	<.001
Risk for depression/anxiety	.06	<.001
Pain interference	.23	<.005
Physical function	.23	<.05
Social function	.09	<.05
Depression	.09	<.005
Fatigue	.12	<.05
Anxiety	.02	<.05

Significant associations only displayed; associations controlled for metastatic status and number of comorbid conditions

- Ever experiencing peripheral neuropathy was associated with greater distress, increased likelihood of risk for depression/anxiety, and poorer quality of life (more symptom burden and worse function)
- Greater disruption of peripheral neuropathy to daily life was associated with greater distress, greater risk for depression/anxiety, and poorer quality of life (more symptom burden and worse function)

Provider Communication and Side Effect Management are Associated with Peripheral Neuropathy Disruption

Predictor	t	Semipartial r	p
HCT indicated which SEs need immediate medical attention	-2.32	-.20	<.05
HCT did not discuss possible SEs	2.45	.21	<.05

(F(2,118)=8.46, R²=.13, p<.001)

- Greater peripheral neuropathy disruption was associated with not being counseled on which side effects need immediate attention and health care team not discussing possible side effects

Implications and Conclusions

- Chemotherapy-induced peripheral neuropathy is associated with poorer functional outcomes and symptom burden among breast cancer survivors, whether or not their breast cancer has metastasized
- Many survivors do not feel confident in coping with side effects and want more support in side effect management, yet a substantial proportion report their provider did not discuss coping strategies with them
- Peripheral neuropathy can be challenging to manage and many pharmacologic treatments are accompanied by side effects; providers are encouraged to assess and refer survivors to appropriate supportive services, and peripheral neuropathy should be considered as a meaningful endpoint in clinical studies

Acknowledgments

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References

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- The Registry is for all cancer survivors and caregivers, but also includes 10 disease-specific surveys.
- Findings contribute toward advancing research, health care and policy.
- Over 12,000 cancer survivors and caregivers are registered in the Cancer Experience Registry.

Learn more or join the Registry at www.CancerExperienceRegistry.org