

Impact of Social Support on Health Related Quality of Life in Low income Breast Cancer survivors

F. Rab, MD, MHSc, MSc; A. Thind, MD, PhD; K.N.Speechley BA, MA, PhD.
Western University, London (Ontario)

Background/Objectives

Breast cancer is the most commonly diagnosed cancers among women worldwide, North America the highest incidence rates for breast cancer globally. High incidence and increased survival due to early detection and better treatment options, resulted in increase in number of women living with breast cancer North America.

Social support is known to improve general well-being among e suffering from chronic diseases. There is limited research on social support and its effect on quality of life in women with breast cancer.

Our objective was thus to determine the association between perceived availability of social support and physical as well as emotional HRQOL in low SES women diagnosed with breast cancer.

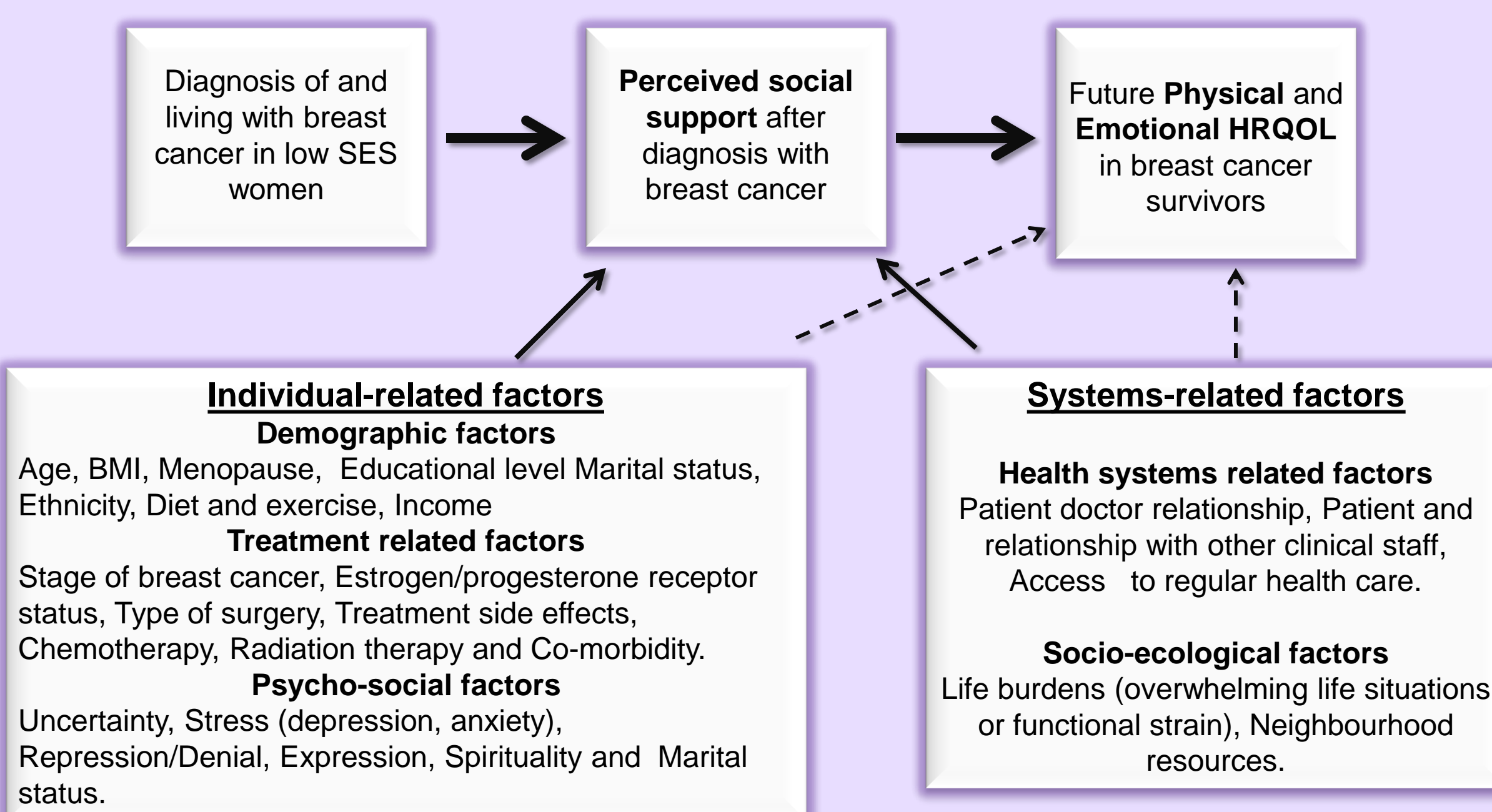
Data set used

We used survey data that followed a cohort of 921 underserved women enrolled in the BCCTP (Breast and Cervical Cancer Treatment Program) in California. The main focus of BCCTP data was to collect individual and systems-level determinants of breast cancer treatment.

These 921 women older than 18 years were interviewed thrice over a period of 3 years. The baseline interview was conducted at 6 months, 2nd interview after 18 months and a 3rd interview after 3 years of breast cancer diagnosis. 634 women completed all three surveys.

Interviews consisted of 1 hour phone surveys and included questions related to treatment, daily living and quality of life. A medical chart review was also conducted and used in our analysis.

Conceptual framework



Methods

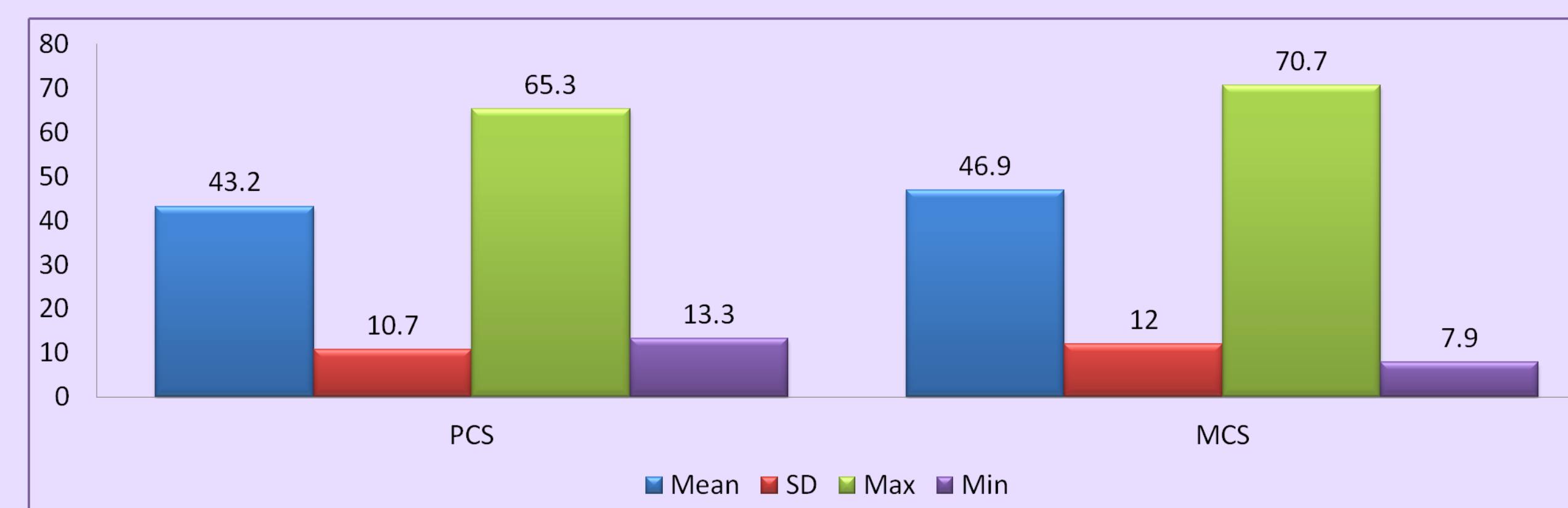
Using a cross sectional design, HRQOL was determined through the Medical Outcomes Study Short Form-36 (MOS SF-36) at 3 years after diagnosis with breast cancer. Thirty five items from the survey were converted into 8. Physical and mental component summary scores (PCS and MCS) were generated from the 8 sub-scales. Measurement of Perceived social support and other co variables at 18 months after breast cancer diagnosis. Perceived social support was measured using Medical Outcome Studies Social Support (MOS SS) survey. Other co variables included individual and system level variables detailed in the conceptual frame work were added to the analysis.

Separate multiple regression analysis models were run for PCS and MCS. Forward selection (entry criteria $p < 0.2$) and backward elimination (exit criteria $p < 0.2$) stepwise linear regression analyses were used to check for robustness of our main models. Regression diagnostics were performed to fit the multiple regression models.

Results

- Average age of women at the time of their diagnosis with breast cancer was 51 years.
- Majority of women were Latina (55.0%).
- 64.1% had family income of $\leq 20,000$ US dollars annually.
- 59.4% had education up to or less than high school.
- Mean score for perceived social support 66.2.

Distribution of PCS and MCS (Physical and Mental Component Summary scores)



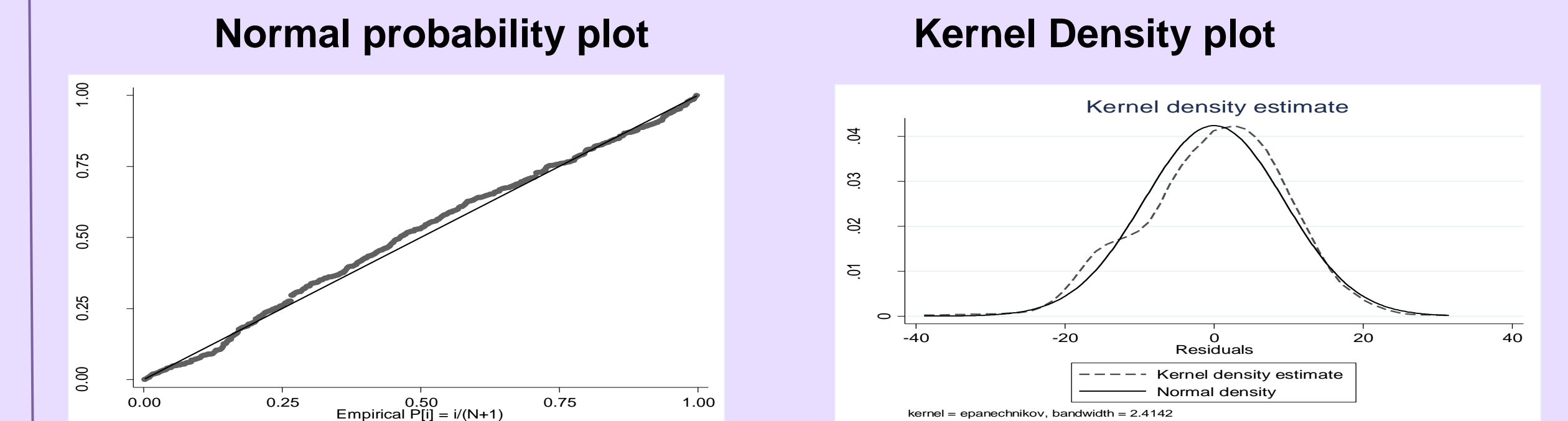
Multiple regression results of predictors of HRQOL (PCS and MCS)

Predictor variables	Outcome variable (N = 515)			
	Physical Component Summary Scores (PCS)		Mental Component Summary Scores (MCS)	
	β^a (95% Confidence interval)	p-value	β^a (95% Confidence Interval)	p-value
Key predictor variable				
Perceived social support	0.01 (-0.2 to 0.05)	0.4	0.03 (-0.007 to 0.07)	0.1
Individual-related variables				
Menopause				
Premenopausal	Reference category		Reference category	
Postmenopausal	-2.3 (-4.1 to -0.5)	0.01*	1.3 (-0.7 to 3.4)	0.2
Treatment related factors				
Received chemotherapy				
No	Reference category		Reference category	
Yes	-4.2 (-6.7 to -1.8)	0.001*	0.5 (-2.2 to 3.3)	0.7
Received radiation therapy				
No	Reference category		Reference category	
Yes	5.4 (0.2 to 10.6)	0.04*	3.3 (-2.8 to 9.1)	0.3
Number of co-morbidities				
None	Reference category		Reference category	
One	-2.6 (-4.7 to -0.5)	0.01*	-0.7 (-3.0 to 1.6)	0.5
≥ 2	-6.3 (-9.0 to -3.7)	0.00*	-2.5 (-5.5 to 0.4)	0.1
Treatment side effects				
≤ 5	Reference category		Reference category	
> 5	-3.7 (-5.7 to -1.6)	0.00*	-3.1 (-5.5 to -0.7)	0.009*
Did not report any side effects	-2.1 (-4.5 to 0.3)	0.08	-1.0 (-3.8 to 1.7)	0.4
Psycho-social factors				
Anxiety				
No	Reference category		Reference category	
Yes	-1.0 (-3.1 to 1.0)	0.3	-4.2 (-6.6 to -1.9)	0.00*
Depression				
No	Reference category		Reference category	
Yes	-4.1 (-6.0 to -2.1)	0.00*	-6.7 (-8.9 to -4.5)	0.00*

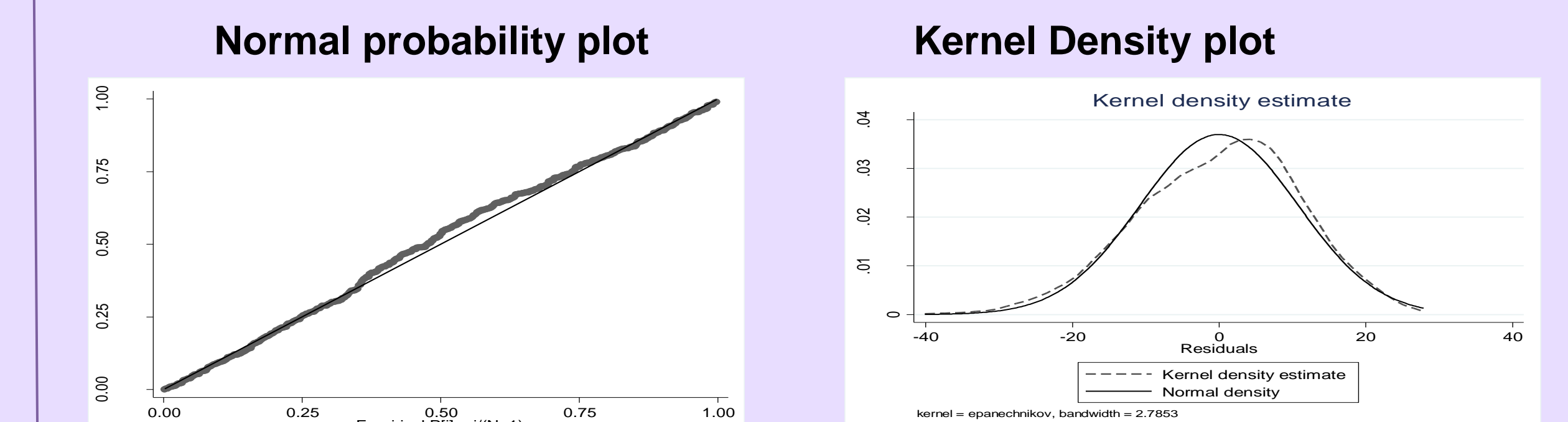
*Significant at $\leq 0.05\%$ level
*a: regression co-efficient

Regression Diagnostic plots

Physical Component Summary Scores (PCS)



Mental Component Summary Scores (MCS)



Discussion

Both physical and emotional HRQOL were below average among breast cancer survivors in our study as PCS and MCS were below norm based mean scores. Physical HRQOL was poorer than emotional HRQOL.

We found that perception of perceived social support was lower than average among breast cancer patients in our study i.e. 66 ± 26 . The women reported lower scores despite the fact that most women in our study were Latinas and generally the Latin culture is associated with strong familial ties and social support provided by close and extended family and friends. Several factors could have resulted in lower perception of social support among women in our sampled population. Stress caused by the diagnosis of breast cancer, or lower SES status could be some reasons affecting the perception of social support in these women.

Several individual-related factors in our study were associated with physical HRQOL. Most significant among these were treatment related factors such as more number of side effects, more co-morbidities and resulted in poor physical HRQOL. Poor emotional HRQOL was associated with those who had psychological co-morbidities such as anxiety and depression as well as those who had more treatment side effects.

No relationship was found between systems-related factors and physical or emotional HRQOL in our study.

Conclusions

Several factors affect HRQOL women from lower socioeconomic background with breast cancer. Multiple co-morbidities, menopause at the time of diagnosis with breast cancer, and adjunct chemotherapy are poor prognostic factor for long term physical HRQOL. Higher number of treatment side effects and depression in women with breast cancer results in poor physical and emotional HRQOL. Anxiety in women with breast cancer was identified as poor prognostic factor for emotional HRQOL. Further studies are need to understand the effects of perceived social support on HRQOL in breast cancer survivors.