Surgical Decision Making in Young Breast Cancer Patients: Impact of Pre-treatment Surgical Preference Congruence with Final Surgical Treatment on Psychosocial Health

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Background

- Young women with breast cancer (BCA) = Those with BCA who are 40 years old or younger
  - 5% of breast cancer cases
- Unique group of BCA patients at a different stage in life than older women with BCA[9]
  - Raising families
  - Building careers
  - Obtaining an education
- Amongst all patients with breast cancer type of surgery itself impacts quality of life, with those who undergo more extensive surgery (mastectomy) having
  - Poorer body image & body perception
  - Poorer sexual health
  - More anxiety than those having breast conserving surgery
- Patient preference is now at the forefront of surgical decision making, yet we have very little knowledge of women's pre-treatment surgical preferences which may be impacted by women's own life experiences, those of friends & family, news, or media
- We have little data relating to if pre-treatment surgical preferences match, or don't match, surgery received, and how that impacts psychosocial outcomes and overall cancer experience

Methodology

- Queried the RUBY study database:
  - Women < 41 years old recently diagnosed with BCA
  - Patients recruited & enrolled at the time of surgical consultation
  - Patients completed questionnaires at baseline (the time of their surgical consultation) and post-treatment (after completion of surgery, radiation & chemotherapy)
- Women were asked in questionnaires
  - At baseline: before you met your surgeon your attitude towards breast surgery was?
  - Possible responses:
    - I wanted to preserve my breasts if at all possible
    - Definitely wanted my breast removed
    - Definitely wanted both of my breasts removed
    - I had no opinion and was waiting for recommendation from surgeon
    - Other
  - Post-treatment: what kind of primary breast surgery did you have?
- Definitions of surgical congruence groups:
  -***Congruent***: pre-treatment surgical preference = surgical treatment received
  -***No Preference:*** No expressed pre-treatment preference
  -***Non-congruent:*** Pre-treatment surgical preference ≠ surgical treatment received
- Unique opportunity to ask women about their surgical preference at the time of surgical consultation
- Assess the impact of surgical congruence on psychosocial health at baseline and post-treatment
- Outcomes of interest[5,9]
  - Regret after treatment (Decision regret score)
  - General anxiety (GAD-7)
  - General depression (PHQ-9)
  - Satisfaction with body image/breast (Breast Q breast satisfaction)
- Univariate and multivariate analyses performed

Results

- 1000 women enrolled from July 2015 – March 2022
- Median age 37 yo
- Type of surgery (**Figure 1**): Breast conserving surgery 39.2% vs. mastectomy 60.8%
- Surgical congruence status (**Figure 2**) Congruence 326 (32.6%), no preference 468 (46.8%), non-congruence 206 (20.6%)

Summary of Results from **Table 1**:

- Congruent patients had higher breast satisfaction pre- and post- treatment than non-congruent patients
- Among mastectomy patients, significantly higher breast satisfaction if they wanted a mastectomy
- No preference patients had higher depression scores than congruent patients pre-treatment, this did not persist post-treatment
- Non-congruent patients twice as likely to have higher decision regret than congruent patients

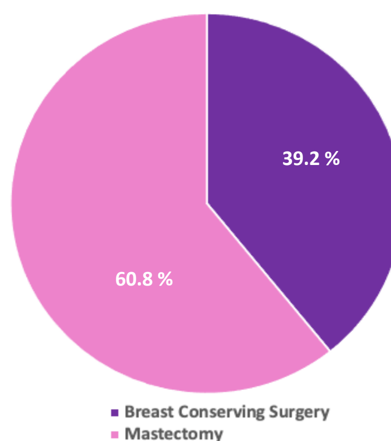

Figure 1. Type of surgery received by RUBY study participants.

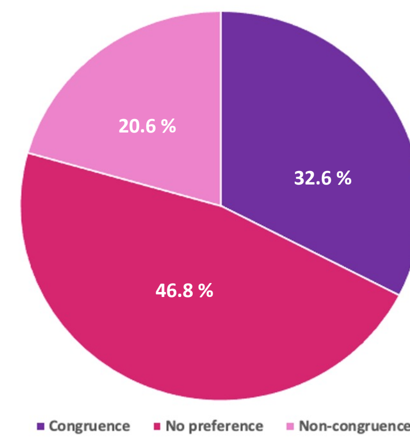

Figure 2. Surgical congruence status expressed by RUBY study participants.

Table 1. Multivariate analyses examining impact of surgical congruence on psychosocial outcomes among young breast cancer patients.

Psychosocial Outcome	N	Category	Odds Ratio	[0.025	0.975]	P-value	Meaning
Breast Q – Satisfaction with Breasts Pre-treatment	985	Non-Congruent	Reference				Congruent patients had more satisfaction with their breasts pre
		No preference	3.18	0.80	12.71	0.10	
		Congruent	1.76	1.14	2.71	0.03	
Breast Q – Satisfaction with Breasts Post-treatment	797	Non-Congruent	Reference				Congruent patients had more satisfaction with their breasts post
		No preference	1.12	0.73	1.70	0.61	
		Congruent	1.66	1.07	2.56	0.02	
Breast Q – Satisfaction with Breasts for Mastectomy patients Pre-treatment	581	Non-Congruent	Reference				No association
		No preference	1.55	0.90	2.68	0.12	
		Congruent	1.36	0.75	2.47	0.31	
Breast Q – Satisfaction with Breasts for Mastectomy patients post-treatment	581	Non-Congruent	Reference				Congruent patients had higher breast satisfaction
		No preference	1.22	0.68	2.21	0.50	
		Congruent	1.94	1.05	3.60	0.04	
Anxiety (GAD 7) Pre-treatment	981	Congruent	Reference				No association
		No preference	0.64	0.14	2.85	0.56	
		Non-Congruent	0.78	0.52	1.18	0.24	
Anxiety (GAD-7) post-treatment	794	Congruent	Reference				No association
		No preference	4.62	0.88	24.31	0.07	
		Non-Congruent	0.70	0.43	1.14	0.15	
PHQ-9 Pre-Depression Score	512	Congruent	Reference				Pre: the no preference patients had 17 x higher depression scores than congruent
		No preference	17.1	1.44	202.4	0.02	
		Non-Congruent	1.52	0.84	2.76	0.17	
PHQ9 Post Depression Score	417	Congruent	Reference				No association
		No preference	7.28	0.57	92.9	0.13	
		Non-Congruent	0.98	0.50	1.94	0.96	
Decision Regret Post	294	Congruent	Reference				Non-congruent twice as much regret as the congruent, No difference between no preference and congruent
		No Preference	1.07	0.77	1.50	0.68	
		Non-Congruent	2.13	1.04	4.39	0.04	

Conclusions

- Congruence of surgical treatment to pre-treatment preference is associated with psychosocial outcomes
- Suggests surgeons/treatment team should consider patient surgical preference when counselling patients about surgical treatment
- Consider altering surgical discussion counselling and connecting women to psychosocial resources if in a group at risk of poorer psychosocial outcome
- When women are engaged & active participants in their care they have better psychosocial outcomes

Acknowledgements

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