

Background

- Multiple studies have documented that psycho-educational and psychosocial supportive care have many benefits.
- Cost information is required before adopting supportive care interventions.
- Quality adjusted life years (QALYs) usual in economic analysis however less useful in evaluation of symptom management interventions.
- Given et al (2010) suggest examining the fixed and variable costs of such interventions and relating them to cost savings from health care use.

Objective

1) Determine the fixed and variable costs of two 8-week psychosocial interventions delivered by telephone.

Supportive Health Education (SHE): Telephone education and written content addressing normal breast health and breast cancer, tests, terminology, treatment and side effects, strategies to manage side effects, communication about cancer with others (family, provider), lifestyle changes, follow-up treatment and survivorship, referrals and resources.

Telephone Interpersonal Counseling (TIPC): Based on interpersonal psychotherapy, TIPC is delivered by Master's prepared social workers who use interpersonal communication techniques to focus on depression, anxiety, and interactions between the participant and his/her social network.

- Compare the costs of the two interventions
- Estimate cost savings

Sample

Sample Characteristics	
Typical Latina with breast cancer	Typical Caregiver
Early 50's	Early 40's
Married	Married
Educational level ≤ high school	Employed
Unemployed, disability	Educational level ≤ high school
Income <\$30,000 year	Income <\$30,000 year
Stage II or III	
Median time since diagnosis was 5.6 months in SHE and 6.3 months in TIPC	

Methods

- Secondary data analysis of randomized controlled trial (RCT) that enrolled 230 Latina breast cancer survivors and their caregivers (dyads).
- Dyads received one or two psychosocial interventions.
- Data on emergency room/urgent care and hospitalizations in the past month collected at baseline and post-intervention (4 months).
- Logistic regression models used in the analysis of health care use to estimate odd ratios (OR) of use and 95% confidence intervals (CIs).

Results and Analysis

- ✓ TIPC was superior to SHE on managing survivor and caregiver depression.
- ✓ SHE was superior to TIPC on managing global distress from 12 symptoms (e.g. depression, anxiety, fatigue).

Table 2. Fixed and variable intervention costs.

	SHE	TIPC
Fixed Development Costs		
Personnel (2 PhDs)	10 hours at \$100/hour, total \$1000	30 hours at \$100/hour, total \$3000
Translation	\$3000	\$0
Supplies	\$500	\$500
Total Fixed Development Costs	\$4500	\$3500
Fixed Training Costs		
Personnel interventionist	8 hours at \$15/hour, total \$120	24 hours each social worker at \$26/hour *, total \$624
Supervisor (PhD)	4 hours, total \$400	12 hours, total \$1200
Supplies	\$100	\$300
Total Fixed Training Costs	\$620 per education specialist	\$2,124 per social worker
Fixed Delivery Equipment Costs computer, telephone, headset	\$1775	\$1775
Total Fixed Costs	\$6,895	\$7,399
Variable Delivery Cost		
Personnel		
Delivery by interventionist	Per survivor: delivery \$54 (8 sessions at 27 minutes each x \$15/hour); scheduling \$15 (1 hour); total \$69 Per caregiver: delivery \$48 (8 sessions at 24 minutes each x\$15/hour); scheduling \$15 (1 hour); total \$63	Per survivor: delivery \$104 (8 sessions at 30 minutes each x \$26/hour); scheduling \$26 (1 hour); total \$130 Per caregiver: delivery \$101 (8 sessions at 29 minutes each x\$26/hour); scheduling \$26 (1 hour); total \$127
Supervision	10% of sessions (0.8 sessions per person)	10% of sessions (0.8 sessions per person)
Supervisor time Listening to session recordings	Per survivor: 0.8 sessions at 27 minutes each x\$100/hour, total \$36 Per caregiver: 0.8 sessions at 24 minutes each x\$100/hour, total \$32	Per survivor: 0.8 sessions at 30 minutes each x\$100/hour, total \$40 Per caregiver: 0.8 sessions at 29 minutes each x\$100/hour, total \$39
Supervisor feedback to interventionist	0.8 sessions at 15 minutes each x \$100/hour=\$20	0.8 sessions at 15 minutes each x \$100/hour=\$20
Interventionist time for receiving and processing feedback	0.8 sessions at 30 minutes each at \$15/hour, total \$6	0.8 sessions at 30 minutes each at \$26/hour, total \$10
Materials, Mailing	\$87 per person	\$0
Total variable cost per person:	Per survivor: \$218 Per caregiver: \$208	Per survivor: \$200 Per caregiver: \$196
Total cost per 100 survivors	\$28,695	\$27,399

*During the course of the study, 3 social workers were trained. One educational specialist was trained.

Hospitalizations, Urgent Care and Emergency Department Visits

Survivor:

- Hospitalizations at 4 months reported by 9/85 (11%) in SHE; 17/96 (18%) in TIPC (unadjusted OR=0.55, p=.17)
- Controlling for baseline hospitalizations and age, adjusted rate of hospitalizations was 5% in SHE, 9% in TIPC
- Urgent care/ED visits were reported by 7/85 (8%) in SHE; 16/96 (17%) in TIPC (unadjusted OR=0.45, p=.09)
- Controlling baseline visits and age, odds of an urgent care/ED visit was significantly lower in SHE (3.3%) compared to TIPC (4.7%) (OR=0.31; p=.03)

Caregiver:

- At 4 months, hospitalizations were reported by 5/80 (6%) in SHE and 1/88 (1%) in TIPC.
- Urgent care/ED visits were reported by 4/81 (5%) in SHE and 6/88 (7%) in TIPC
- No adjusted analysis was done with these data due to the low counts

Cost Savings

Hospitalizations

- Unadjusted rates- a difference of 7.1%
- Cost of 7 hospitalizations among 100 survivors - \$13,979
- Cost savings for SHE vs. TIPC was about \$12,683
- When using the adjusted rate (SHE-TIPC), the cost savings of 4 hospitalizations would be about \$6692 per 100 survivors

Urgent Care/ED Visits

- Unadjusted rates- a difference of 9%
- If all 9 visits were urgent care the cost (\$1800)
 - Cost saving for SHE vs. TIPC was about \$504 per 100 survivors
- If all 9 visits were ED, cost would be \$18,000
 - Cost savings for SHE vs. TIPC was \$16,704

Implications and Conclusion

Greater cost of SHE (\$1,296 for 100 participants) vs. TIPC was offset by reductions in health services use among this Latina breast cancer survivor sample.

- Greater cost of SHE was largely due to print and postage
- Translation of materials

Limitations

- Lack of control group, estimated cost saving were relative for the two interventions.
- Health care use was low. Likely multiple factors contributed including limited resources, cultural values, and general characteristics of the sample.
- Measurement of urgent care or ED visits with one item, future studies can measure wider range of services with better tools.

Conclusion

- Findings add to the minimal literature about costs.
- Benefits of psychosocial interventions not only to the survivor symptom management and survivor and caregiver quality of life but also to the reduction health care costs.
- These behavioral interventions could be added easily to a health care system without burdening the workflow of a busy oncology practice.
- Saving a hospitalization or an urgent care or ED visit could more than pay for the costs of these interventions.

This research was supported by a grant from the American Cancer Society (RSG-12-120-01-CPPB)