COST-EFFECTIVENESS ANALYSIS OF HOME-BASED PALLIATIVE CARE FOR END-STAGE CANCER PATIENTS

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Introduction

All Health systems around the world are facing the high cost of cancer care. At the same time, many of those cancers are diagnosed so late when they are incurable. However, end-stage cancer patients need even more supports, as their physical, social, and spiritual situations are rapidly deteriorating. Palliative care by using an interdisciplinary approach is focused on providing relief from symptoms, pain, physical and mental stress. The ultimate goal of palliative care is to improve the quality of life of patients and their family. Two common types of palliative care are home-based and institutional palliative care. However, little is known about which types of palliative care is the most cost-effective strategy.

Objectives

To evaluate cost-effectiveness of home-based palliative care vs alternative institutional palliative care for end-stage cancer patients.

Methods

- The cost of care and outcomes for two groups of end-stage cancer patients are compared: (1) Intervention group that consists of 94 patients who received home-based palliative care including medical, nursing and psycho-social care; (2) Control group consists of 113 patients who were not supported by the home care services and referred to hospitals and cancer out-patient clinics to receive palliative care.
- The aforementioned groups are matched in terms of type and stage of cancer and patient's age and gender.
- The costs of care include all inpatient and outpatient clinical/para-clinical services and pharmaceuticals.
- The effectiveness is measured as length of stay in the hospital (LOS) and percentage of death occurred at home.
- The one-way sensitivity analysis is conducted.
- A time horizon of 6 months is considered.

Results

The reported length of stay (LOS) in hospital was lower for the intervention group compared to the control group (14.75 Day VS 20.45 Day; p=0.052).

More death occurred at home among the intervention group compared with the control group (45.74% VS 23.89%; p=0.001).

Regarding the cost, the mean total costs were lower for intervention group ($4,857 VS $7,221; P=0.019).

This resulted in an incremental cost-effectiveness ratio (ICER1) of $415 per LOS and an incremental cost-effectiveness ratio (ICER2) of $-108 per percentage of death in home.

Our findings indicated that home-based palliative care was a dominant strategy.

Table1.Demographic data of intervention and control group

variable	Home-based		Hospital-based		
	Mean Total Cost($)	percentage	Mean Total Cost($)	Percentage	P value
Home care	154	3	0	0	0
Para-clinical	366	8	438	6	0.511
Pharmaceutical	1,645	34	1,376	19	0.439
Outpatient clinical	110	2	95	1	0.601
inpatient	2,581	531	5,312	741	0.003
Total	4,857	100	7,221	100	0.019

Table2 Mean Total cost of intervention and control group by cost items

variable	Home-based		Hospital-based		
	Mean Total Cost($)	percentage	Mean Total Cost($)	Percentage	P value
Home care	154	3	0	0	0
Para-clinical	366	8	438	6	0.511
Pharmaceutical	1,645	34	1,376	19	0.439
Outpatient clinical	110	2	95	1	0.601
inpatient	2,581	531	5,312	741	0.003
Total	4,857	100	7,221	100	0.019

Table3.Incremental cost-effectiveness ratios 1,2

		Home-based	Hospital-based
Total Cost†		4,857	7,221
Total effect	Eff1(LOS)*	14.75	20.45
	Eff2(death in home)**	45.74	23.89
IncrCost		7,221	
IncrEff	IncrEff1	-5.71	
	IncrEff2	21.85	
ICER1		7,221	
ICER2		-108	

†Total Cost: Mean Total Cost
Eff1(LOS)*: Length of stay in hospital (Day); Eff2(D.H)**: death in home (Percentage)

Conclusion

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- Home-based palliative care appeared to be a dominant strategy for caring end stage cancer patients.
- It decreased the cost of care and increased the death at home at one hand and the length of stay at hospital on the other hand.
- This type of care could be considered for including in benefit package to meet needs of end-stage cancer patients.

Acknowledgement We would like to acknowledge the support received from Ala Cancer Prevention & Control Center (MACSA), Iran Health Insurance Organization (IHIO), and Social Security Organization (SSO) which provided us with accessing to their claim data