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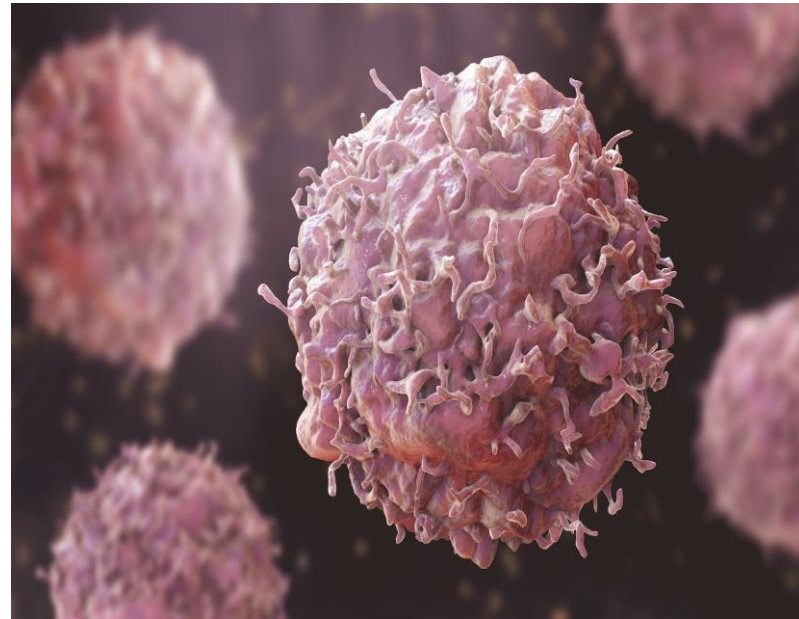


The Dual Burden of Cancer Caregiving: Out-of-Pocket Costs and Psychological Distress among Cancer Caregivers at Tertiary Cancer Care Centers in Nepal

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Background

- Cancer causes **70% of deaths** in LMICs like Nepal, with global cases expected to exceed **30 million by 2040** according to WHO.
- The surge in cancer diagnoses is rapidly expanding the global caregiver population.
- Financial strain—driven by direct payments and lost work—exacerbates the emotional burden on cancer caregivers.
- Unlike in the West, family caregivers in Nepal and other LMICs bear the primary financial responsibility mainly through out-of-pocket (OOP) costs.
- While psychological distress is prevalent, caregiver (OOP) costs and their associations remain understudied in Nepal.

Objectives

General objectives

- ✓ To assess the out-of-pocket cost and psychological distress among cancer caregivers at tertiary cancer centers in Nepal

Specific objectives

- ✓ To estimate the annual out-of-pocket costs incurred by the caregivers of cancer patients
- ✓ To assess the level of psychological distress experienced by the caregivers of cancer patients
- ✓ To identify the proximal determinants contributing to the psychological distress of caregivers

Methodology

Study design: Cross-Sectional Study

Study setting: Public Tertiary Cancer Treatment Centers in Nepal

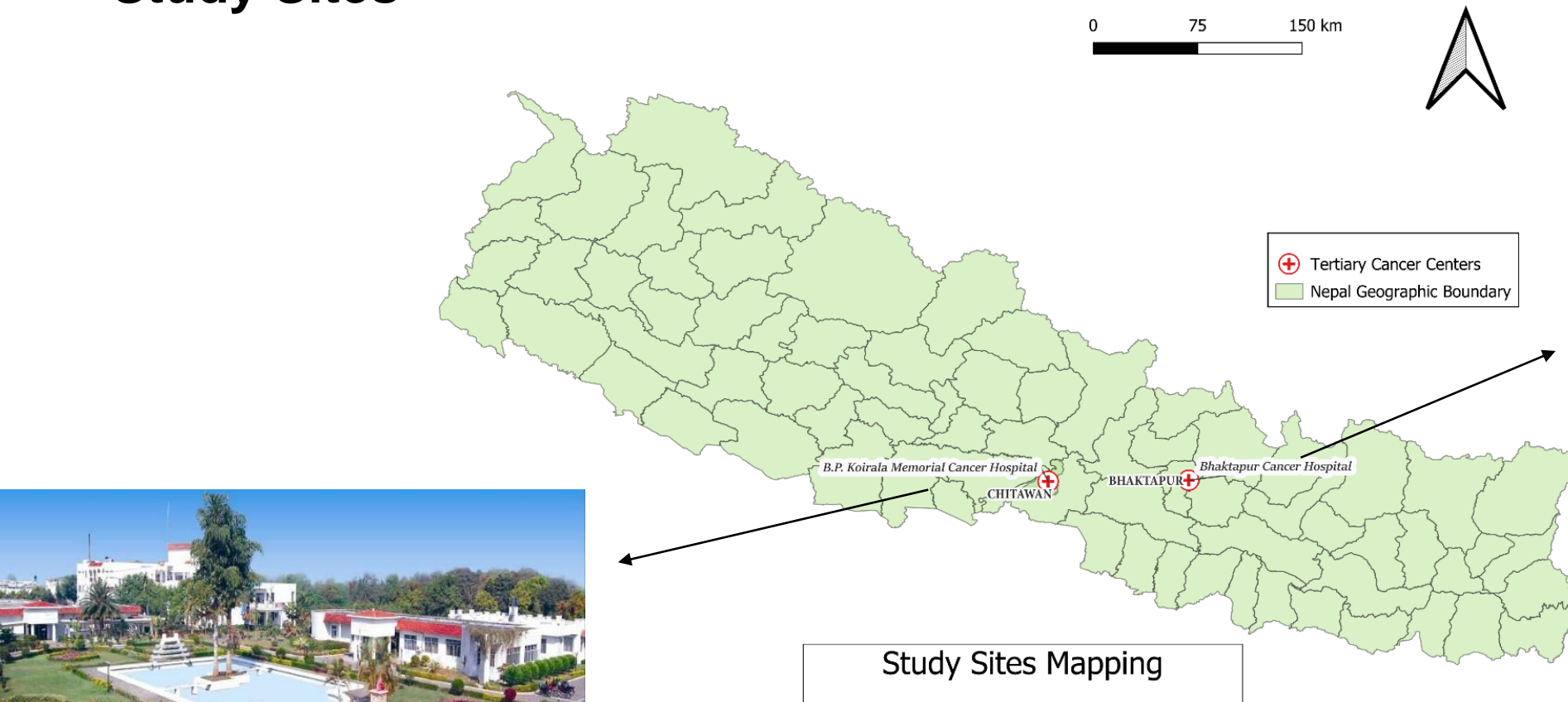
Study population: Primary cancer caregivers (\geq 18 years)

Sample Size: 408

Sampling recruitment strategy: Purposive consecutive sampling


Methodology

Study Sites



Methodology

Cost assessment

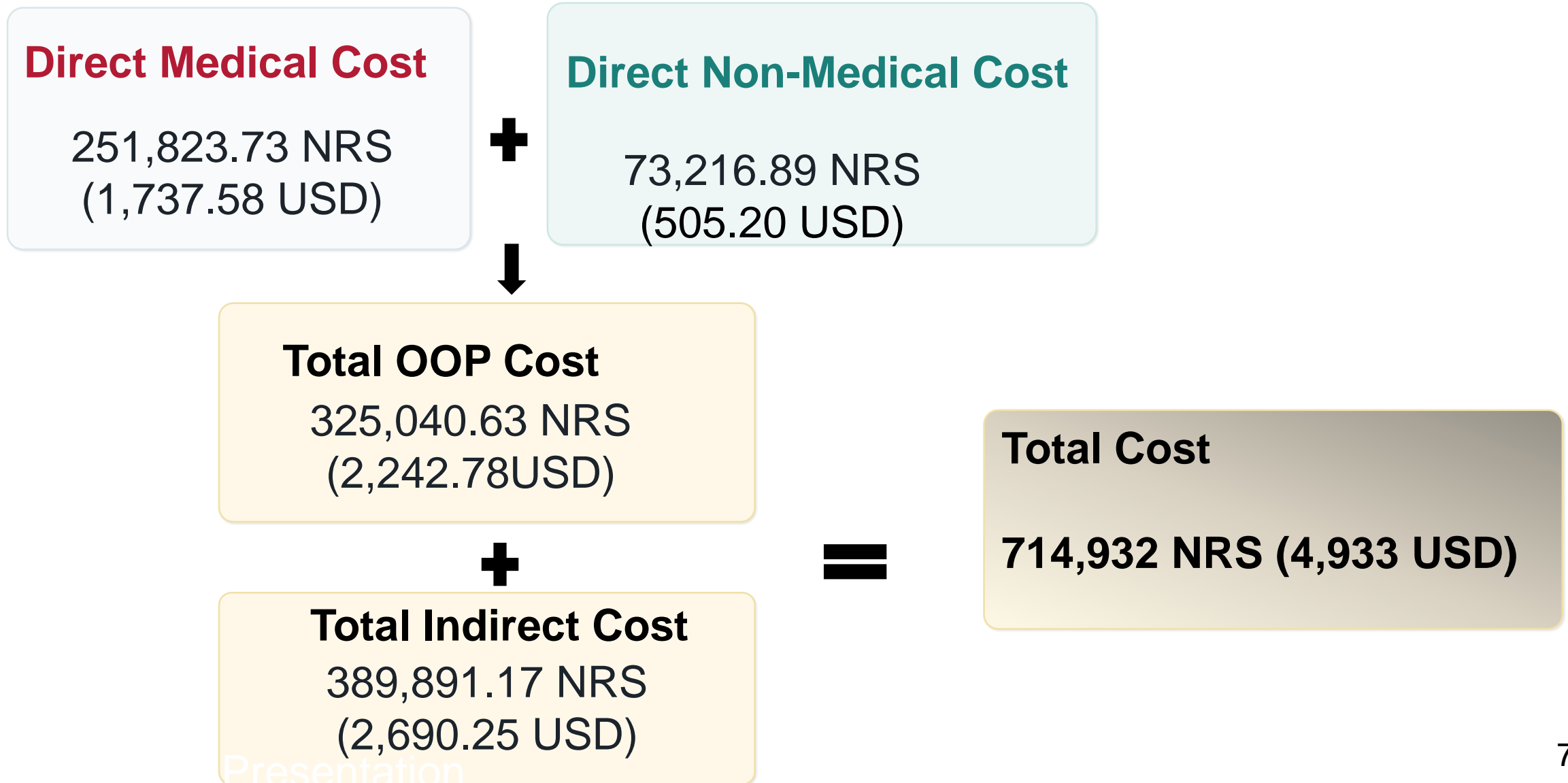
- Direct medical cost
 - Direct non-medical cost
 - Indirect cost
- OO P Cost
- 

Costs were reported in NPR and converted to USD; (*1 NRS= 0.0069 USD*)

Data collection tools

Nepali validated Hopkins Symptoms Checklist-25 (*HSCL-25*) - **Cut-off ≥ 1.75 mean score**

Data analysis: R program, B coefficients with 95% BCa confidence intervals; Bootstrapping (5,000 samples)



Indirect cost formed the largest share of annual caregiver costs

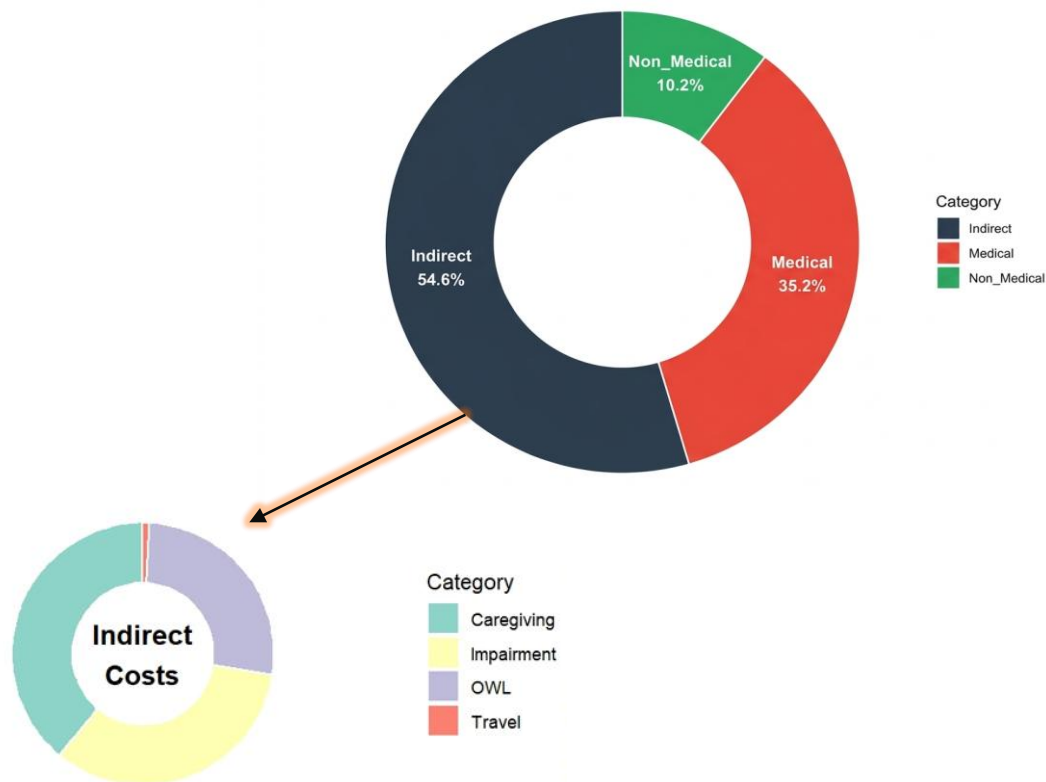


Fig: Percentage Contribution to Total Cost

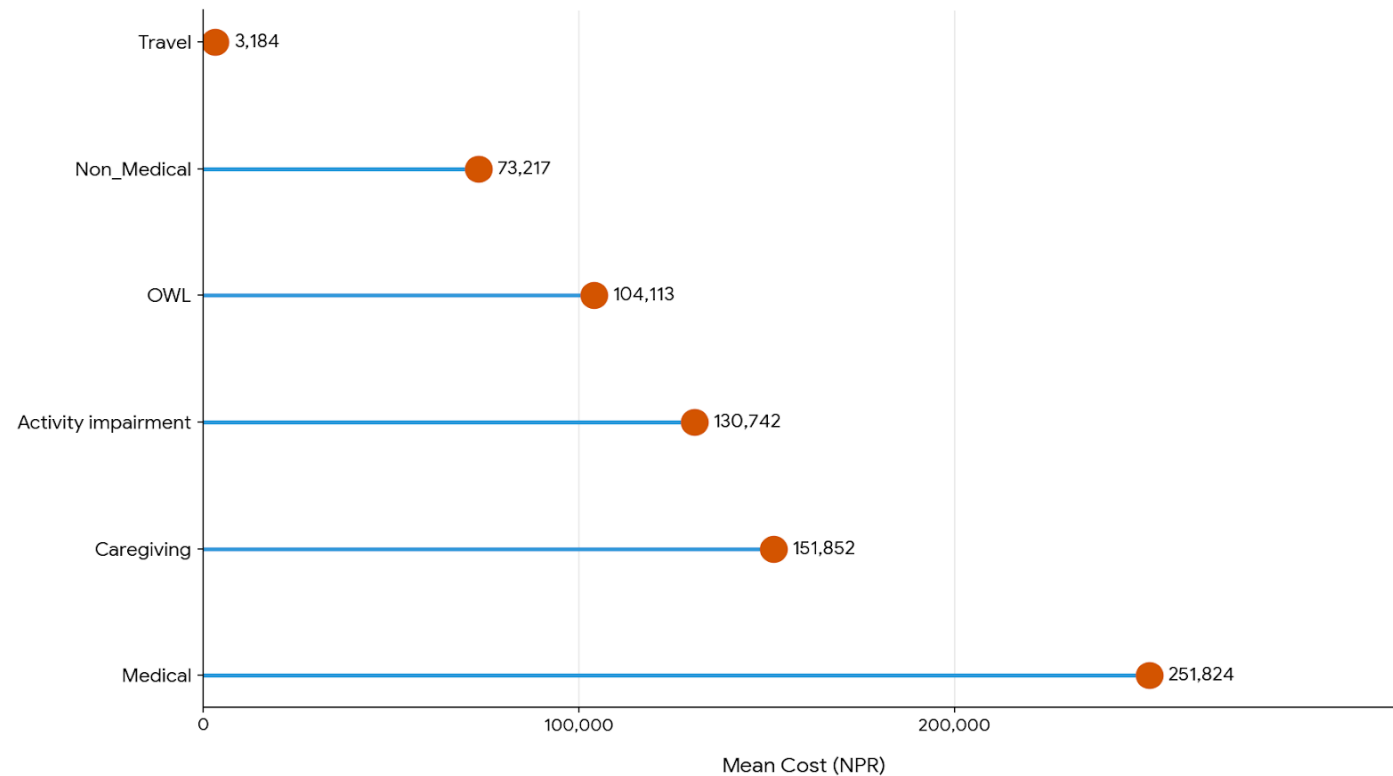


Fig: Ranking of Mean Annual Cost Components

Overall cost split: Indirect 54.6%, Medical 35.2%, Non-medical 10.2%; medical cost remained the largest single component, followed by caregiving time and activity impairment.

Results

The cost profile differed between employed and unemployed caregivers.

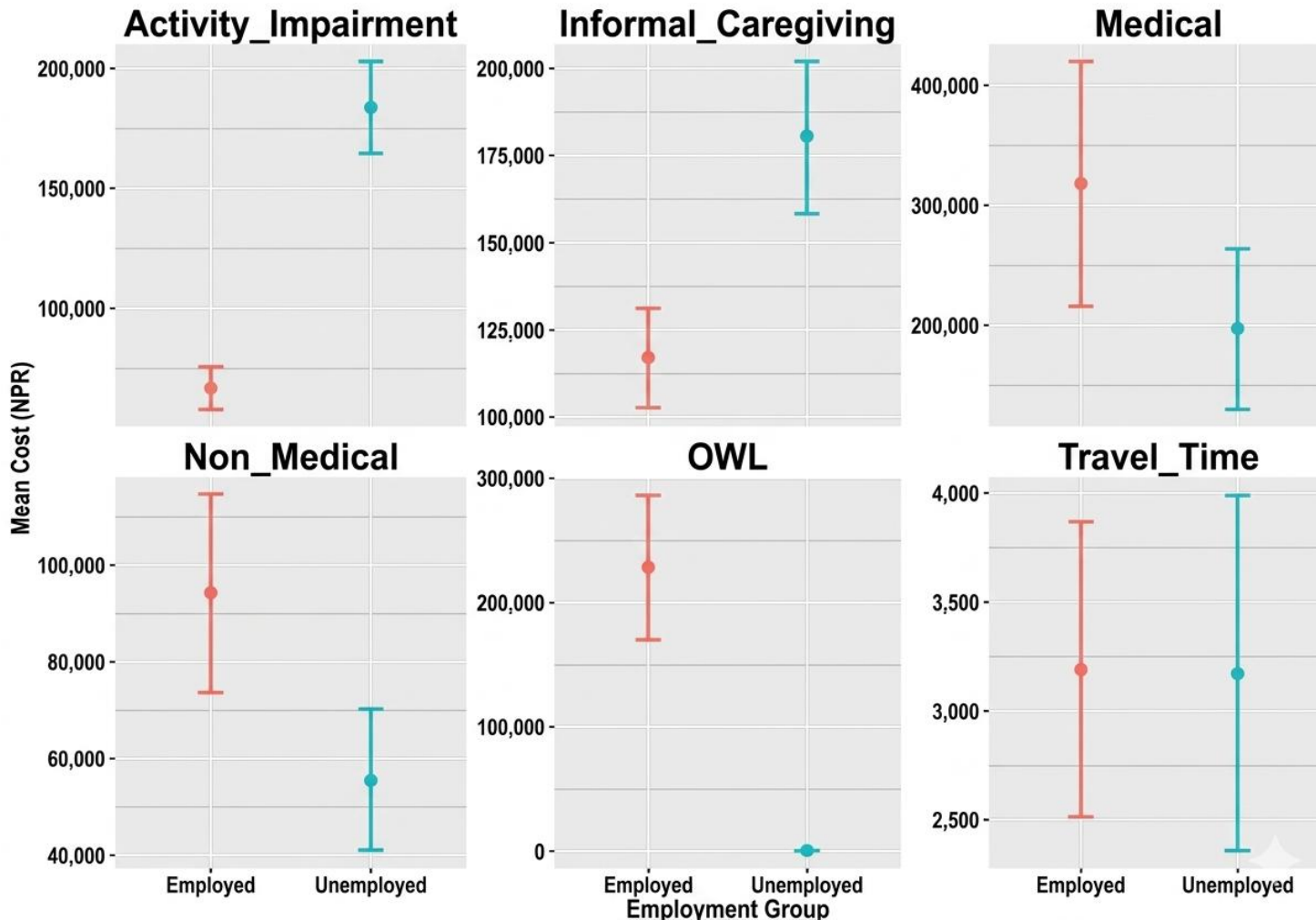


Fig: Mean Annual Cost with 95% CI

Key interpretation

- ↑ Medical cost
- ↑ Indirect cost components among unemployed caregivers
- OWL was concentrated among employed caregivers

Results

Mental Health Outcomes:

61.8%

Symptomatic
anxiety

52.7%

Symptomatic
depression

58.8%

Overall
psychological
distress

Results

REGRESSION ANALYSIS

Adjusted predictors of psychological distress (significant associations only)

Predictor	B	95% BCa CI
CAREGIVER CHARACTERISTICS		
Female (Ref: Male)	7.19	(4.47, 9.74)
Nuclear family (Ref: Joint)	3.19	(0.57, 5.67)
Parent caregiver (Ref: Child)	7.48	(0.20, 15.40)
OUT-OF-POCKET COST QUINTILE (Ref: Lowest)		
Lower	3.89	(0.95, 6.96)
Middle	7.40	(3.84, 10.51)
Higher	16.95	(12.61, 20.32)
Highest	23.25	(19.10, 27.38)
PATIENT CHARACTERISTICS		
Treatment duration 6–12 months (Ref: < 6 months)	−3.58	(−5.99, −1.15)
Treatment duration >1 year	−3.77	(−6.56, −0.46)
Unknown cancer stage (Ref: Stage I)	7.40	(3.75, 10.94)
Stage III cancer	7.15	(2.98, 12.01)
Stage IV cancer	6.20	(1.59, 11.57)
Outpatient follow-up chemotherapy (Ref: Inpatient)	5.11	(2.43, 7.84)
Non-ambulatory patient (Ref: Ambulatory)	4.64	(1.58, 8.46)

Only adjusted predictors with 95% BCa confidence intervals excluding 0 are shown.

Key Findings

- ✓ **OOP was the dominant predictor: B = 23.25 in the highest-cost group**
- ✓ **Female caregivers (B = 7.19) and parent caregivers (B = 7.48) had higher distress.**
- ✓ **Disease severity and care intensity increased distress**
- ✓ **The early treatment period appears most vulnerable**

Conclusion

1. Cancer caregivers in Nepal face intersecting psychological and financial burdens.

2. OOP expenditure is not only a cost issue; it is also a strong predictor of psychological distress among cancer caregivers.

3. Female caregivers, parent caregivers, and caregivers of patients with advanced or unknown-stage cancer need focused support.

4. Routine caregiver distress screening, financial protection policies, and psychosocial support should be integrated into oncology care.



I am a public health professional and researcher with a Bachelor of Public Health (BPH). My research focuses on health economics, cancer care, psycho-oncology, maternal and child health, and non-communicable diseases. I currently work as a Public Health Officer at PCDC, Gandaki.

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