Impoverishment impact of cancer in Nepal: A cross-sectional study from two public tertiary cancer hospitals

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Background

- Cancer in Nepal: 6.3% of total deaths, 14K deaths annually, 4.3% of total disability-adjusted life years in 2021
- Increasing burden of cancer impacts national economies through increased health care spending, lost productivity, & rising impoverishment
- There is a scarcity of comprehensive research on the financial impact of cancer in Nepal.
- The study aims to estimate the impoverishment impact of cancer in Nepal.

Methods: Study design and study context

- Cross-sectional study design
- Conducted in two tertiary public cancer hospitals of Nepal (**Bhaktapur Cancer Hospital and BP Koirala Memorial Cancer Hospital**)
- Face-to-face interviews with 353 patients undergoing active cancer treatment, selected purposively
- Patients with breast, cervical, lung, oesophageal, and stomach cancer
- Data collection in April-May 2024, data collected through face-face interviews
- Ethical approval from Nepal Health Research Council, and REK, Norway

Study variables

Characteristics	Variables
Socio-demographic	age, sex, ethnicity, religion, province, residence, education, occupation, type of family, family size, wealth quintile
Treatment	type of cancer, cancer stage during diagnosis, duration of diagnosis, duration of treatment, treatment modality, received inpatient care
Cost of cancer care	Direct medical, direct non-medical, indirect cost (productivity loss of patients and caretakers), out of pocket payment cost
Impoverishment	Incidence and intensity of impoverishment
Financial impact	Financial coping strategies, consequences of cancer treatment

Measurement of impoverishment

- **Incidence of impoverishment:** proportion of households that fell below the national poverty line after deducing out of pocket spending on cancer from the annual household expenditure.
- **Intensity of impoverishment:** comparing the poverty headcounts before and after the out-of-pocket payments.

Socio-demographic characteristics

- Median age (IQR) in years: 56 (20), Female (72.8%)
- Urban residence (70.5%)
- Province: Bagmati (35.7%), Lumbini (16.1%), Gandaki (15.6%), Koshi (13.0%), Madhesh (9.1%), Sudurpashchim (7.1%), Karnali (3.4%)
- Educational qualification: No formal education (58.1%), Basic education (22.1%), Secondary education and above (19.8%)
- Median travel time: **300 minutes**
- Occupation: Not working in the past 12 months (44.2%), agriculture (21.5%), employed (18.7%), others (including housemaker): 15.6%

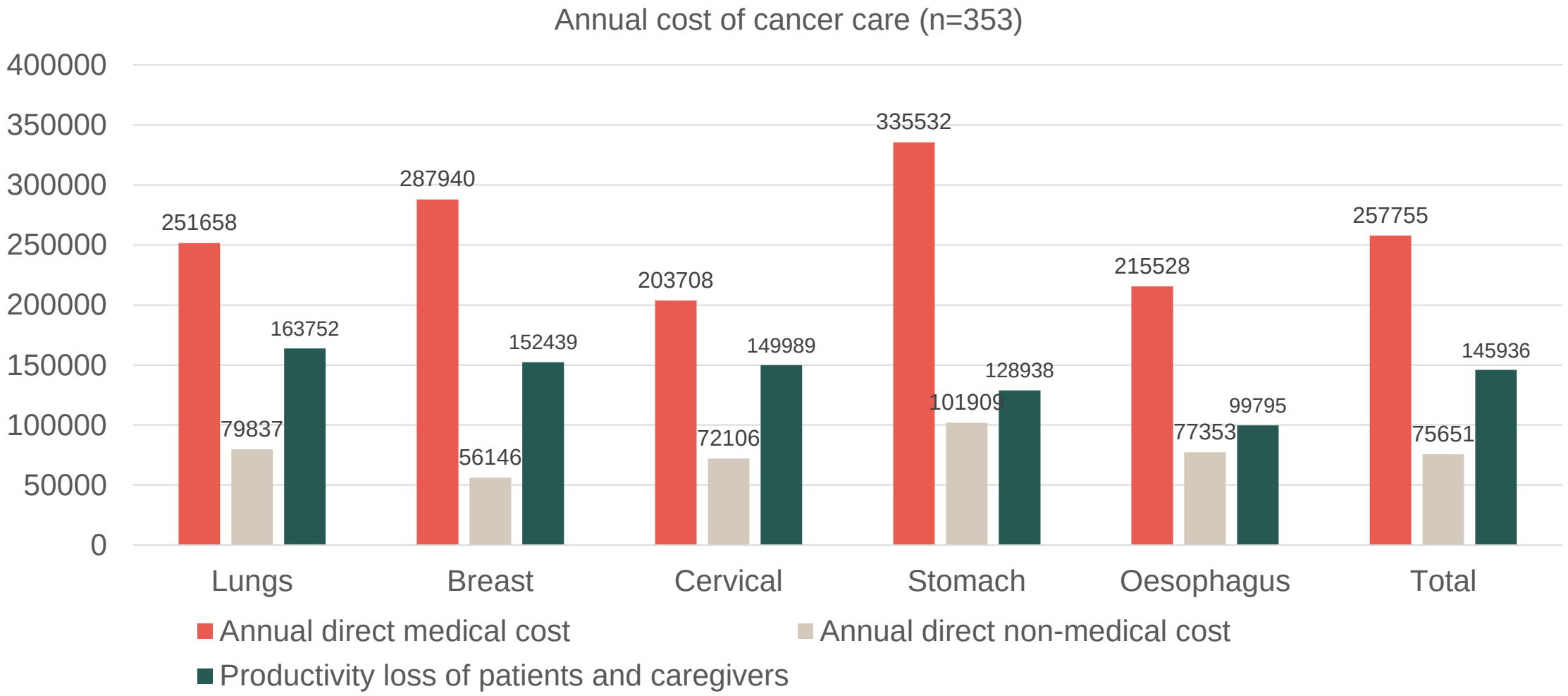
Treatment-related characteristics

- Duration of diagnosis: <6 months (56.4%), 6 months to 1 year (27.2%) and >1 year (16.4%)
- Treatment stage: Early stage (45.4%), Advanced stage (44.9%), Not mentioned (9.7%)
- Treatment type (multiple response): Chemotherapy (73.4%), surgery (37.4%), radiotherapy (24.1%), Palliative care (5.1%)
- Treatment modality: Singular (67.7), Combination (32.3%)
- Presence of other chronic diseases: 33.4%
- admission to inpatient care in last year (68.8%), prior visit to private HF: 61.8%

Membership in social health protection scheme

- Membership in national health insurance: 54.7%
- Membership of at least one social health protection scheme: 58.6%
- Heard about deprived citizen treatment fund: 92.9%
- Utilization of cancer subsidy among those who have heard about it: 87.8% (81.6% among the total patients)

Annual cost of cancer care is around 4.8 lakhs NPR in average



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What are the cost drivers of cancer care in Nepal?

- treatment duration of 6-12 months and above one-year
- combined treatment modalities
- admission to inpatient care
- prior visits to private health facilities

Who are at risk of catastrophic health expenditure?

- Incidence of catastrophic health expenditure was 96.9% and 83.9% at the 10% and 25% threshold of annual household expenditure
- Treatment duration of 6-12 months (compared to <6m)
- admission to inpatient care
- lowest to high wealth quintiles (compared to highest)

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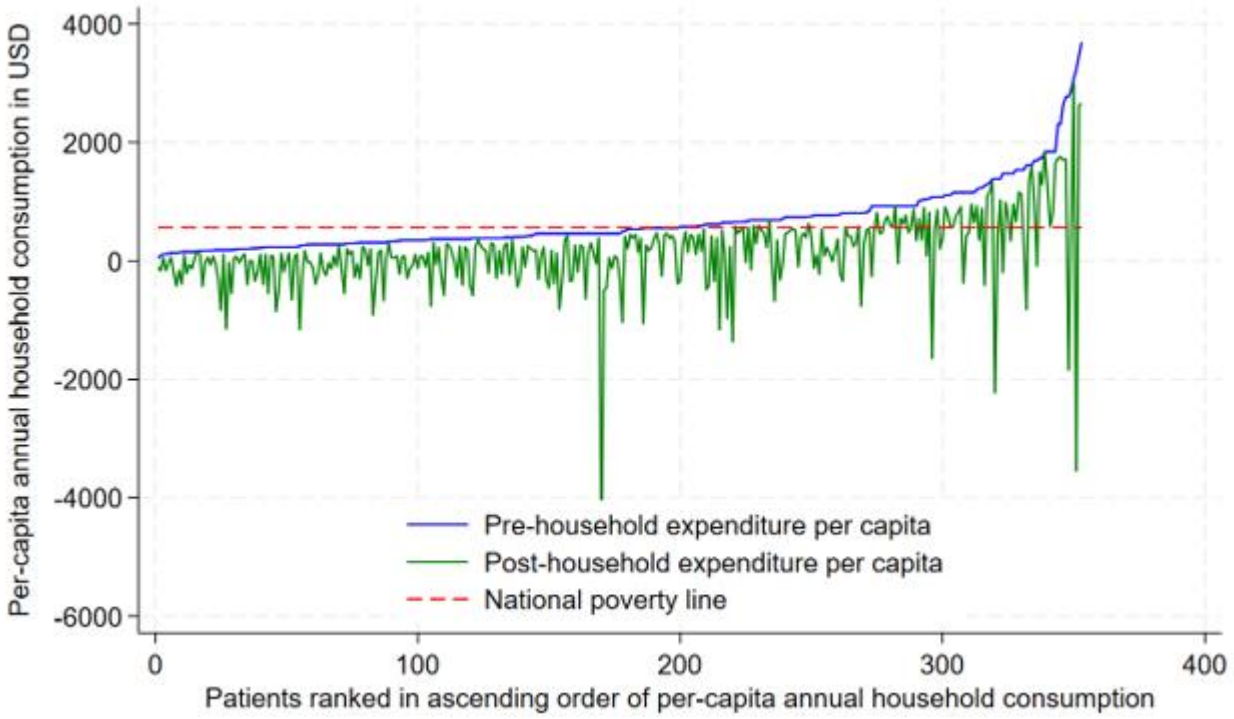
Impoverishment impact of cancer

- 82.7% of the households were below the poverty line after post-treatment expenditure but 56.4% of the households were already below the poverty line.
- 26.3% of the households were thus pushed below the poverty line due to cancer treatment.
- The proportion is 24.3% if we include patients only who started their treatment within last one year

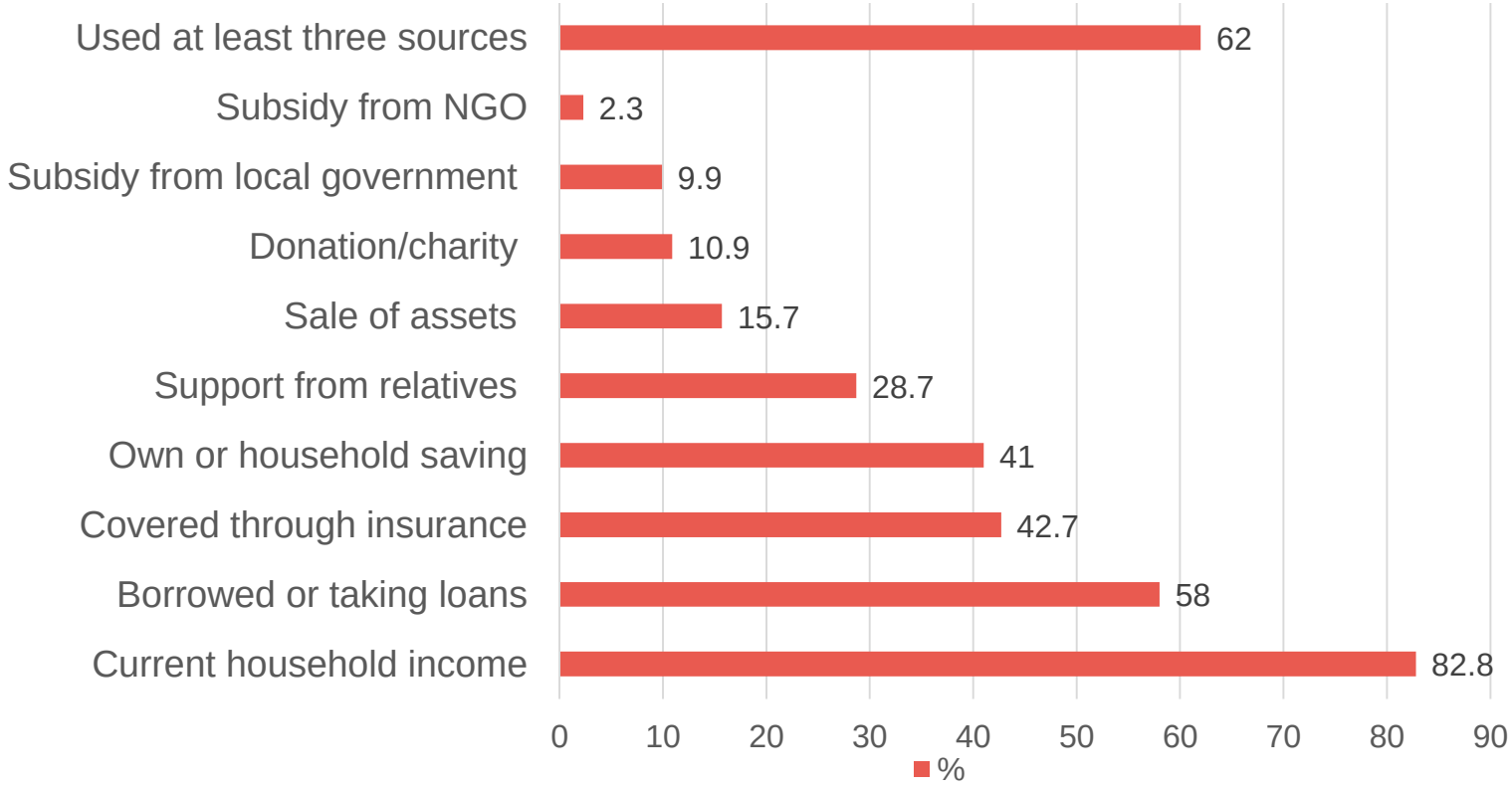


Who are at risk of impoverishment due to cancer?

- Wealth quintile was the only variable significantly associated with the impoverishment due to cancer.
- Patients in the lowest to higher wealth quintile had 39 times higher odds (95% CI: 18-87) of being impoverished compared to patients in the highest wealth quintile.
- Risk of impoverishment due to treatment costs is relatively uniform across any other socio-demographic and treatment related groups.

Financial coping strategy used by patients (%, n=353)

83% of households used their household income
41% used their saving
58% took loan
16% sold their assets to finance cancer treatment



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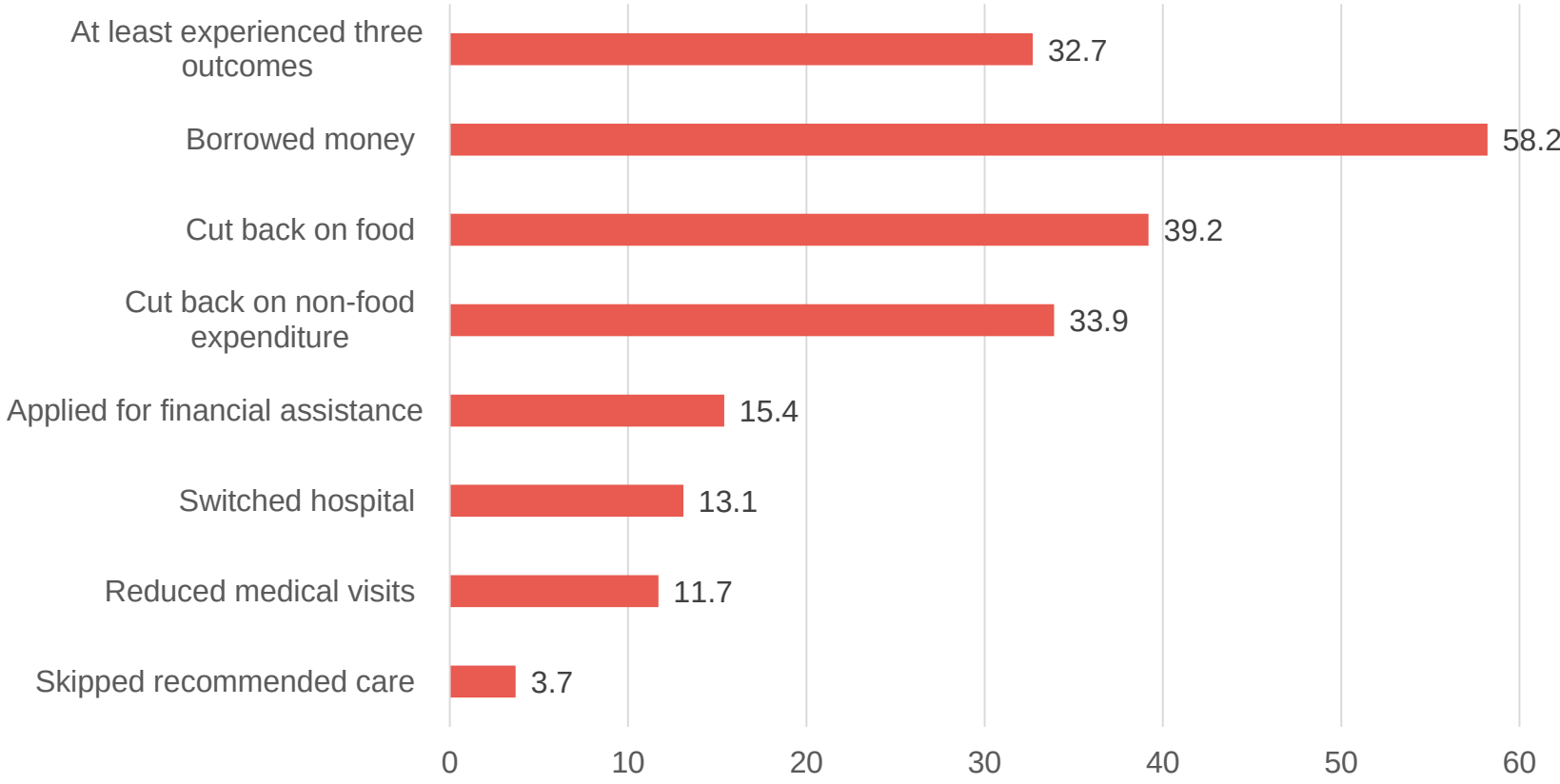
Consequences of cancer treatment (%, n=353)

Two in five households had to cut back on food

one in three had to cut back on non-food expenditure



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Conclusion

- Cancer treatment pushed 1 out of 4 households below the poverty line
- Cancer care is financed mainly through household income/saving or at relational level
- Existing social health protection schemes are insufficient to ensure financial protection
- Integrate fragmented cancer subsidies and treatment schemes, focus on low-income households, and prioritize essential cancer interventions in national health benefit package

Speaker Bio

- Pratik is currently a PhD research fellow at the University of Bergen, Norway
- He has a decade of experience in health system of Nepal particularly focusing on health system research

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