



The Cost of Cure: Understanding Financial Toxicity in Head and Neck Cancer Survivors



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Background

- Financial Toxicity (FT) is defined as the objective and subjective patient-level impact of the costs of cancer care.
- It can afflict individuals even those with health insurance - from any socioeconomic background.^{1,2}
- Compared to individuals with other chronic illnesses, cancer survivors have been shown to have higher out-of-pocket expenses (OOPE) which may persist years after initial diagnosis.^{2,3}
- Several large-scale studies have suggested a link between cancer-related financial strain and decreased health-related quality of life (HRQOL).⁴⁻⁶
- For patients with advanced or potentially curable cancer, discussion of treatment options vis-à-vis length of life, quality of life, and financial burden is at the crux of shared decision-making.
- Rapid translation of breakthroughs in cancer biology into new therapies has led to increasing complexity in treatment choices, which often vary little in clinical effectiveness and toxicity, but have wide disparities in cost.⁷
- Following treatment, up to 48% of head and neck cancer (HNC) survivors reduced work, among whom 33% ceased employment.⁸
- Inability to return to work may reduce earnings or employment-based health insurance options, thereby exacerbating FT and influencing treatment choices and resources for medical care.
- The purpose of our study is to understand HNC survivors' treatment-related FT.

Materials and Methods

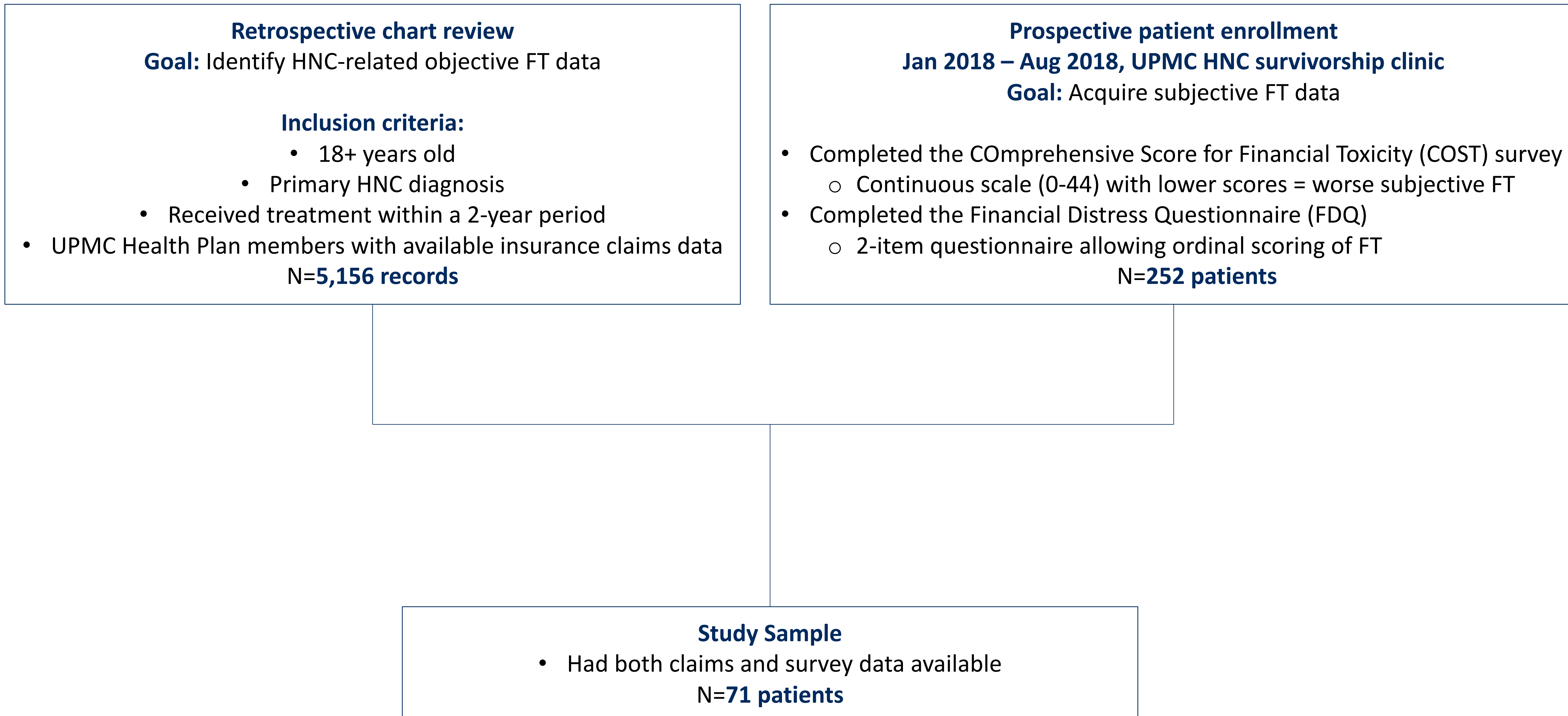


Figure 1. Patient selection flow diagram

Results

Table 1. Relevant Patient Characteristics

Variable	Participants with one of the three most common cancer sites	
	Total Participants (N=71)	Patients, No. (%) (N=54)
Age at visit, mean (SD), years	63.03 (10.45)	63.50 (9.71)
28-40	1 (1%)	0 (0%)
41-50	3 (4%)	5 (9%)
51-60	22 (31%)	15 (28%)
61-70	26 (37%)	21 (39%)
71-80	15 (21%)	10 (19%)
>80	4 (6%)	3 (6%)
Sex		
Male	48 (68%)	39 (72%)
Female	23 (32%)	15 (28%)
Race		
White	65 (92%)	50 (91%)
Black or African American	6 (8%)	5 (9%)
Insurance		
ASO	5 (7%)	4 (7%)
Commercial	17 (24%)	12 (22%)
Individual Exchange	10 (14%)	9 (17%)
Medicaid	10 (14%)	9 (17%)
Medicare	27 (38%)	19 (35%)
Special Needs	2 (3%)	1 (2%)
AJCC 7th Stage		
Stage I-II	11 (20%)	9 (16%)
Stage III-IV	52 (73%)	47 (85%)
Unknown/Not available	8 (11%)	0 (0%)
Treatment		
CRT	24 (34%)	20 (37%)
RT	2 (3%)	1 (2%)
Surgery alone	9 (13%)	8 (15%)
Surgery + CRT	20 (28%)	18 (33%)
Surgery + RT	16 (23%)	7 (13%)
Site		
Oropharynx	22 (31%)	22 (41%)
Larynx	17 (24%)	17 (31%)
Oral cavity	15 (21%)	15 (28%)
Other	17 (24%)	-
Time since Diagnosis, years		
0-1	20 (28%)	18 (33%)
2-3	15 (21%)	13 (24%)
4-10	18 (25%)	11 (20%)
11-20	15 (21%)	11 (20%)
>20	3 (4%)	1 (2%)
Time since Treatment Completion, years		
0-1	23 (32%)	20 (37%)
2-3	12 (17%)	11 (20%)
4-10	18 (25%)	11 (20%)
11-20	15 (21%)	12 (22%)
>20	3 (4%)	1 (2%)

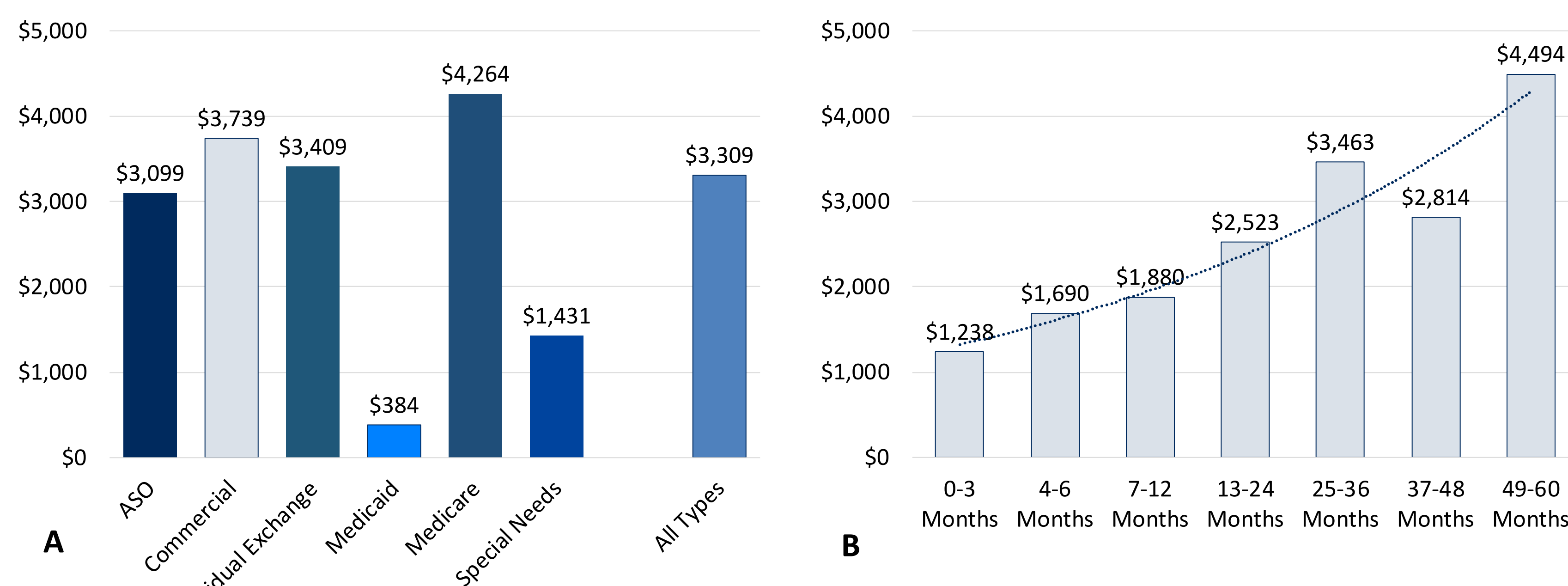


Figure 2. Average Per-Member OOPE by Insurance Type (A) and by Treatment Length (B). OOPE increased by 84% for treatment lengths up to 3 years vs 1 year, and by 30% for lengths up to 5 years vs 3 years.

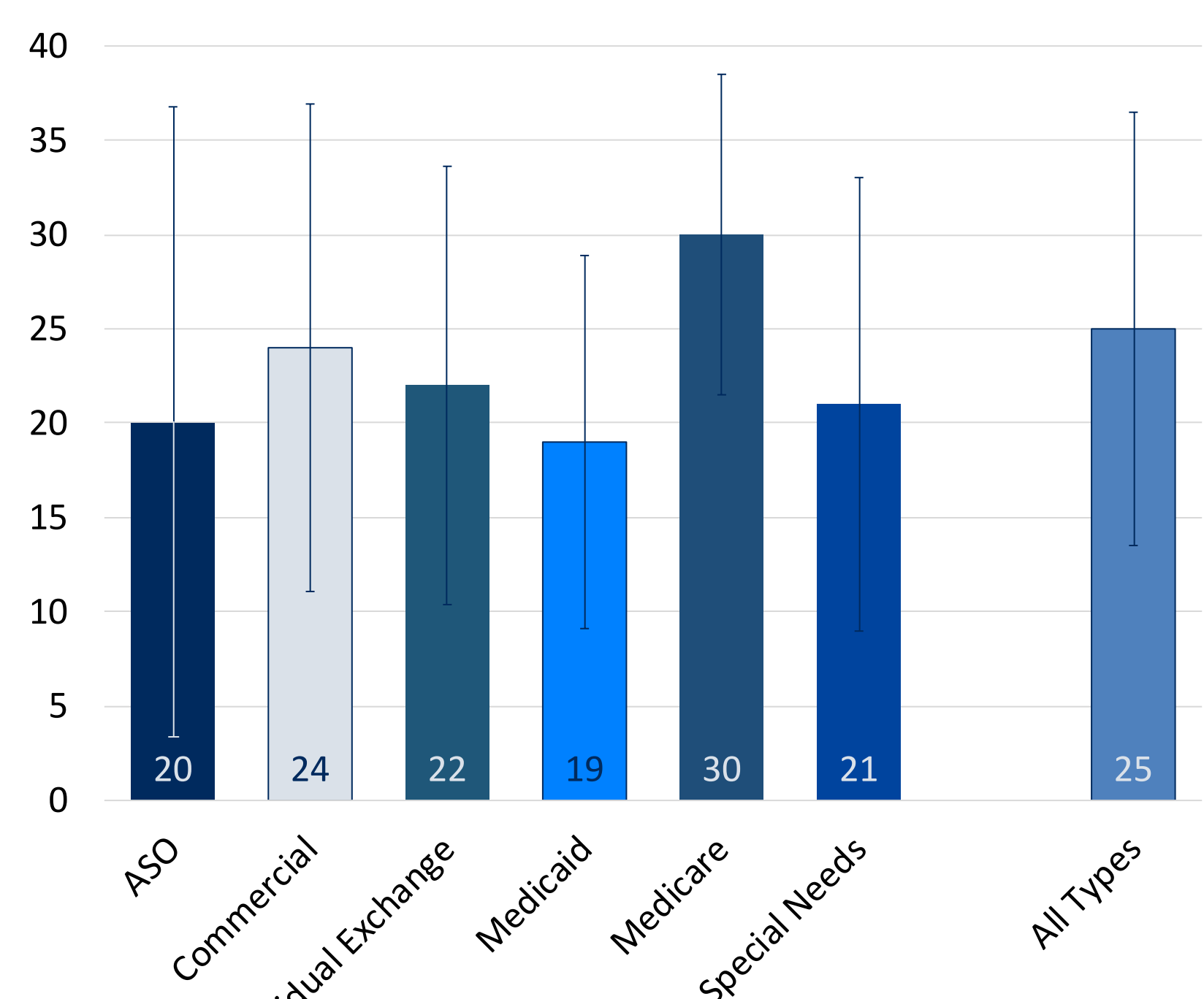


Figure 3. Average COST score by Insurance Type

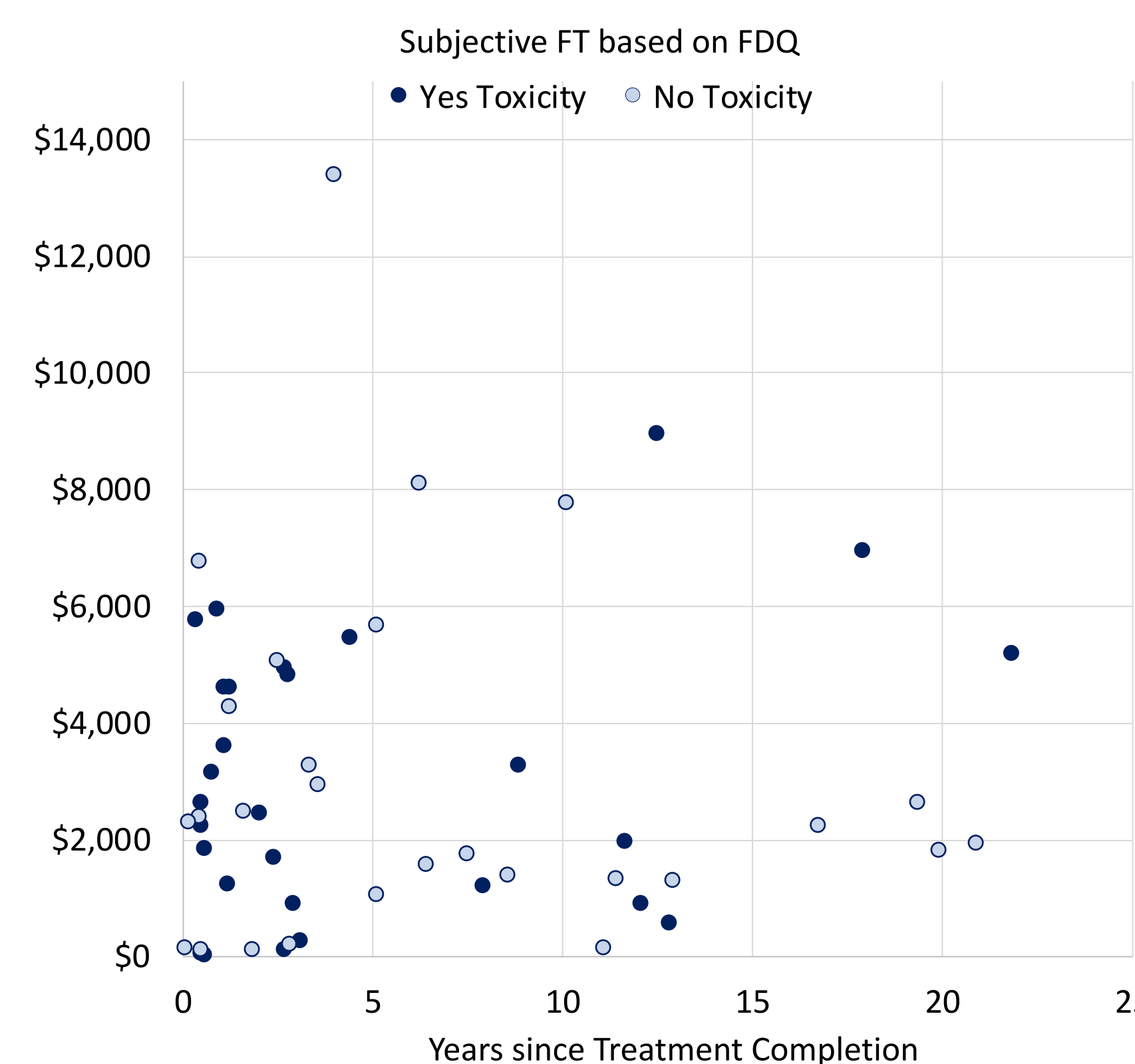


Figure 4. OOPE by Years since Treatment Completion, color-coded based on results of FDQ in the 3 most common sites (Oral cavity, Oropharynx, Larynx). OOPE do not return to baseline even years after treatment completion.

Conclusions

- OOPE vary widely across different insurance plans, with a considerable proportion of survivors reporting high FT.
- OOPE continue to rise as treatment length increases, highlighting the importance of shared-decision making prior to establishing a treatment plan and discussing costs of cancer treatment with patients prior to initiating treatment.
- Medicaid patients displayed low objective FT (by OOPE) but the highest subjective FT (by COST). The former may be explained by the comprehensive coverage programs like Medicaid offer while the latter may reflect the non-medical socioeconomic conditions patients may be experiencing.
- OOPE display a pervasive pattern which persists for years after treatment, suggesting that HNC-related FT is a chronic issue that patients must grapple with even long after being cured.
- The results of the FDQ seem to go in line with data from objective FT (OOPE). However, further analysis is needed to confirm this association.
- Further work is needed to better understand the inability to return to work after HNC treatment. This may be linked to critical work functions (eg: speech) being affected, thus potentially contributing to persistent FT long after treatment.

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