

Background

- Financial toxicity (FT) describes the overall mental and economic burden that results from cancer diagnosis and treatment
- Due to rising direct and out of pocket costs, novel diagnostics, and therapeutics in Kidney Cancer (KC), many survivors have FT
- Existing data has identified FT as an issue impeding delivery of high quality healthcare and as having a long-lasting psychological impact on patients
- We analyzed subjective financial distress experienced by survivors with kidney cancer utilizing large national CDC health surveys over last decade

Methods

- Used the Centers for Disease Control National Health Interview Surveys (CDC NHIS) to identify adults with history of KC (2008-2016)
- Measured the following financial stressors:
 - 1) Delaying or foregoing medical care
 - 2) Delay in dental care
 - 3) Worry about medical bills
 - 4) Delay in seeking mental health
 - 5) Difficulties paying for prescription medication
- Used both sampling and design variables to account for the complex survey design and participant nonresponse, as well as make estimates nationally representative
- A multivariable logistic regression model using the predictive margins methods was used to estimate association between covariates and KC related problems

Results

Fig. 1

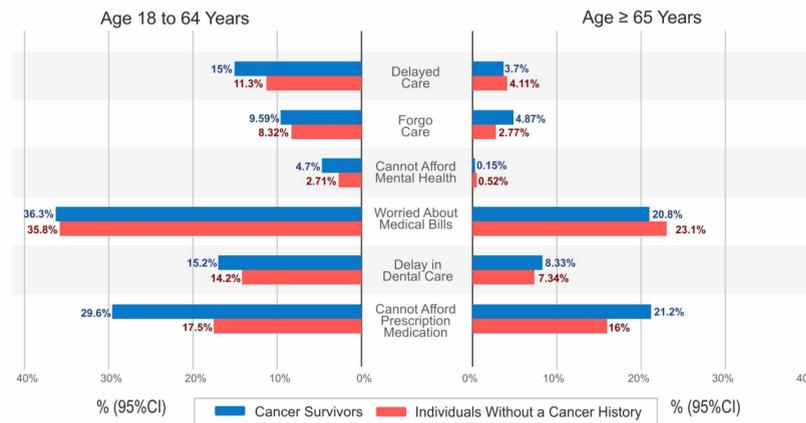
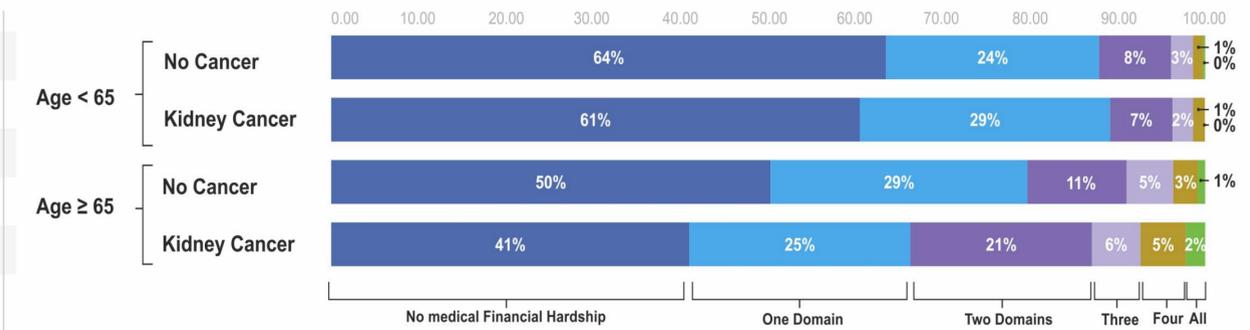


Fig. 2



- Adults aged 18-64 years (n=217,043) and ≥65 years (n=54,235) from the 2008-2016 NHIS were included
- Compared to those without cancer, younger KC survivors (18-64 years) were more likely to report:
 - a) inability to afford prescription medication (29.6% vs 17.5%, p<0.001 OR 2.03(1.49-2.78), p<0.001)
 - b) inability to afford mental healthcare (4.7% vs 2.71%, p<0.001)
- Compared to those without cancer, older KC survivors (>65 years) more likely to report:
 - a) inability to afford prescription medication (OR 1.47(1.05-1.99), p=0.02)
 - However, they were less likely to report:
 - b) worrying about paying for medical costs (OR 0.66 (0.52-0.89), p<0.01)

Age(years)	Material	Summary Measures		Multivariable Regression Measures ²		
		Percentage	P-value	OR (95% CI)	P-value	
18-64	Problems paying for prescription medication ¹	29.6 (21.6 – 37.6)	<0.001	2.03 (1.49-2.78)	<0.0001	
	Psychological	Delay mental health care or counseling	4.70 (0.42-8.98)	<0.001	1.95 (0.94-3.9)	0.69
		Worried about paying medical costs*	36.3 (27.7 – 44.9)	0.65	0.88 (0.62-1.25)	0.22
	Behavioral	Delay or forgo medical care due to worry about cost	16.7 (10.6 – 22.8)	0.14	1.35 (0.90-2.01)	0.14
		Delay dental Care	15.2 (8.64 – 21.7)	0.39	0.92 (0.66-1.26)	0.51
	≥ 65				Individual Measures	
Material		Problems paying prescription medication	21.2 (14.9 – 27.5)	0.06	1.47 (1.05-1.99)	0.02
Psychological		Delay mental health care or counseling	0.15 (0.04 -0.49)	0.31	1.18 (0.43-2.21)	0.75
		Worried about paying medical costs	20.4 (14.8 – 25.9)	0.003	0.66 (0.52-0.89)	<0.001
Behavioral		Delay or Forgo medical care due to worry about cost	6.96 (2.71 – 11.2)	0.21	1.49 (0.81-2.37)	0.21
		Delay in Dental Care	8.33 (4.03 – 12.6)	0.55	1.21 (0.75-2.21)	0.75

*Worried about medical costs include variables: Worried about paying for eye doctor, paying for specialist, and paying for follow up care
¹ Includes variables associated with paying for prescription medication: using alternative therapies to save money
 Adjusted for sex, age, region, smoking status, health status, insurance type, comorbidities

Conclusions

- Our study underscores the importance of individual assessment of FT by age
- Younger KC survivors are particularly vulnerable to toxicities associated with cancer treatment, including rising cost of prescription medication and inability to afford mental healthcare