Missingness Patterns in a Survey of Barriers to Care Among Individuals Diagnosed with Cancer: An Exploratory Analysis

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Eberechukwu Onukwugha, PhD, MS[1], Chia-Yun Hsu, BPharm, MS[1], Urooba Ali, BS[1], Lana Le, BS[1], Abree Johnson, MS, MBA[1], Jessica Wimbush, ODS-C[2], Julia F. Slejko, PhD[1]
[1]Department of Practice, Sciences, and Health Outcomes Research, School of Pharmacy, University of Maryland, Baltimore
[2]Maryland and Stewart Greenebaum Comprehensive Cancer Center, University of Maryland Medical Center

University of Maryland School of Pharmacy

INTRODUCTION

- Factors that constitute barriers to healthcare utilization among individuals diagnosed with cancer are not always available in administrative claims data. They would be collected via survey, which can result in incomplete or missing responses.
- Missingness is typically characterized as 'yes/no' without details on the characteristics of non-responders.
- However, these details can inform statistical approaches to account for missing responses.

OBJECTIVE

- Our objective was to describe missingness patterns from a survey of social and economic barriers to healthcare utilization.

METHODS

- This study utilized a linkage of individual-level tumor registry from the University of Maryland Greenebaum Comprehensive Cancer Center and Medicare claims data from 2018-2021.
- Eligible individuals returned a paper questionnaire fielded in 2022-2023.
- The survey asked questions from three categories:
  (1) Income (3 questions) [1]
  (2) Perceived discrimination (5 questions) [1]
  (3) Psychosocial behavioral characteristics (14 questions) [2]
- To capture prior high-cost healthcare utilization, including emergency department (ED) visits and hospitalizations, within the administrative claims, we imposed a 6-month continuous enrollment criterion to define the continuous enrollment sample.
- We extracted the category-level count of missing responses and reported rate of missingness.
- We tested for group differences base on characteristics and whether having healthcare utilization (yes/no) using Fisher's exact test (p-values<0.05 were considered statistically significant).

RESULTS

- Sample size was 297 in the survey sample (**Figure 1**).
- The full sample proportions for male gender, non-Hispanic White were: 56% and 81%, respectively, while the continuous enrollment sample were 54% and 83% (**Table 1**).
- Missingness proportions in the linked sample were 1% for income, 15% for perceived discrimination, and 8% for psychosocial behavioral characteristics (**Figure 2**).
- Missingness proportions in the linked sample were similar across subgroups defined by race (White vs. non-White) and gender.

Figure 1. Selection Flow of Study Population

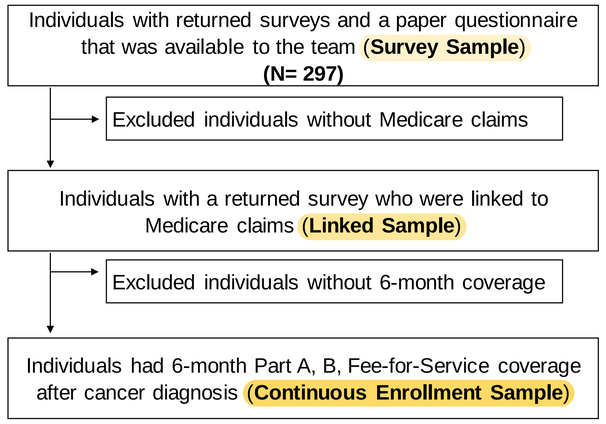
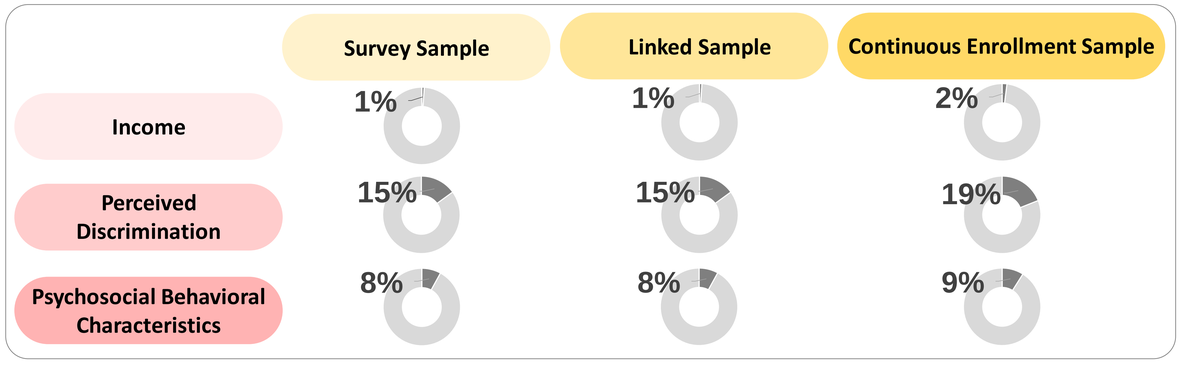


Table 1. Characteristics of Study Population

	Linked Sample	Continuous Enrollment Sample
Sex		
Male	56%	54%
Female	44%	46%
Age		
Mean (SD)	72 (5.5)	73 (5.5)
Median (Q1-Q3)	71 (68-76)	72 (69-77)
65-70 years	43%	36%
71-75 years	32%	33%
76+ years	25%	31%
Race and Ethnicity		
Non-Hispanic White	81%	83%
Non-Hispanic Black or Others*	19%	17%

*Others: Hispanic, Asian, American Indian or Alaska Native, other group, or missing.

Figure 2. The rate of missingness response



- There were statistically significant differences by age groups with the highest missingness for perceived discrimination (21%) and psychosocial behavioral characteristics (11%) in those aged 76+ years (**Figure 3**).
- In the continuous enrollment sample, missingness for psychosocial behavioral characteristics was statistically significantly higher among individuals with prior high-cost healthcare utilization (13%) compared to those without (5%) (**Figure 4**).

Figure 3. The rate of missingness response by age group

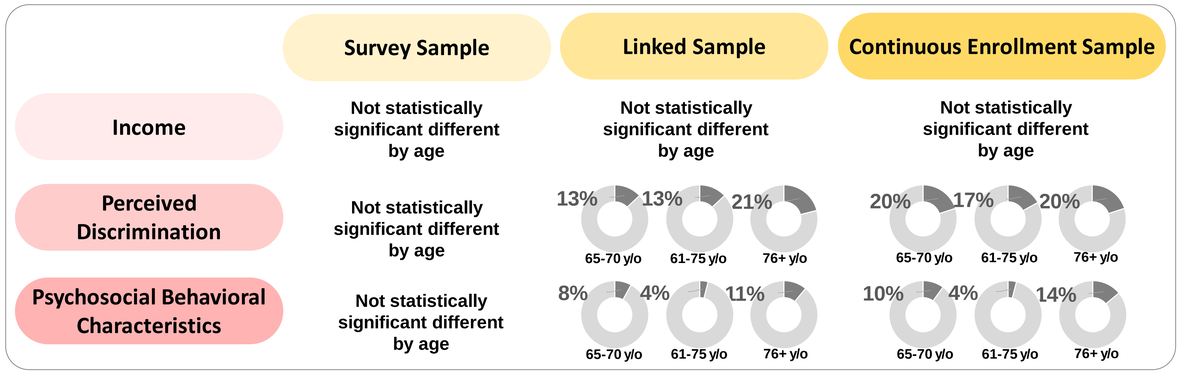
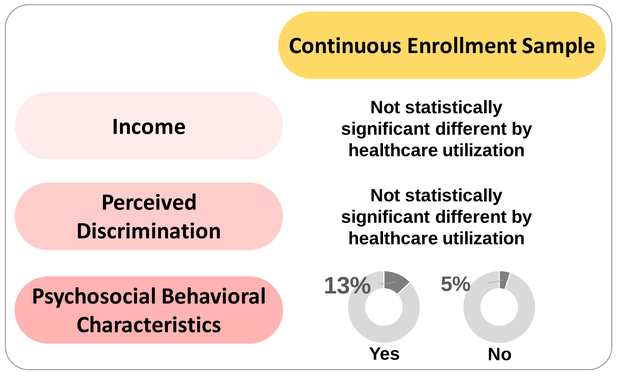


Figure 4. The rate of missingness response by healthcare utilization (Yes/No)



CONCLUSION

- Among survey respondents, responses varied across question categories, age groups, and healthcare utilization groups.
- Additional research is needed to better understand reasons for non-response and develop appropriate pre- and post-survey engagement strategies.

CONTACT INFO

chia-yun.hsu@umaryland.edu
www.linkedin.com/in/cy-hsu

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