Mental Distress and Mental Health Services Receipt in Foreign-Born Survivors of Cancer: a National Health Interview Survey Analysis

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INTRODUCTION

There is a greater burden of mental illness, with a poorer prognosis, in survivors of cancer compared with the general population. Furthermore, mental illness is associated with worse cancer-specific outcomes.¹ Though mental health interventions may reduce mental distress and improve subsequent oncological outcomes,² there are disparities in mental health service (MHS) receipt in the general population, with particularly low use in immigrant populations.³ Therefore, we examined contemporary patterns of mental distress and mental health service receipt by immigrant status in cancer survivors in the USA.

METHODS

Data on a number of health indicators are collected in noninstitutionalized civilian adults by the (U.S.) National Health Interview Survey. For this study, harmonized data of participants reporting a cancer diagnosis were extracted from the Integrated Health Interview Series from 2009 to 2018 who had complete data on several demographic variables including age, sex, race, birth status, insurance status, marital status, socioeconomic status, education, baseline self-reported health, and other comorbid conditions.

Sample weight-adjusted estimates of mental distress were defined by the 6-item Kessler Psychological Distress Scale (K6), where $K6 \geq 13$ is validated and associated with severe mental illness.⁴ MHS receipt in the past 12 months was estimated, stratified by K6 status. Multivariable logistic regression defined adjusted odds ratios (AOR) and 95% confidence intervals (CI) for the odds of MHS receipt, with birth status (US vs non-US) as the primary independent variable of interest, including a mental distress ($K6 < 13$ vs ≥ 13) $\times$ birth

status (US vs non-US) interaction term and adjustments made for the variables listed in Table 1.

The Dana-Farber Cancer Institute IRB deemed the study exempt given the use of public de-identified data.

RESULTS

Among 14,653 adult survivors of cancer and 207,018 adults without cancer, 4.16% vs 3.01% had $K6 \geq 13$, respectively (AOR 0.96, 95% CI 0.87–1.07, $P = 0.504$). MHS receipt did not differ significantly by cancer status (AOR 1.00, 95% CI 0.93–1.07, $P = 0.93$), while significantly higher MHS receipt was observed with $K6 \geq 13$ in both cancer (35.33% vs 7.93%, AOR 4.36, 95% CI 3.39–5.61, $P < 0.001$) and non-cancer groups (37.74% vs 7.12%, AOR 5.56, 95% CI 5.12–6.03, $P < 0.001$).

Among survivors of cancer, younger age, female sex, white race, lower socioeconomic status, lower education attainment, uninsured status, and poor self-reported health status were associated with $K6 \geq 13$, while factors associated with lower MHS receipt included non-US-born status, non-white race, older age, high socioeconomic status, lower educational attainment, lack of health insurance, and better participant reported health status (Table 1).

The distribution of severe mental illness ($K6 \geq 13$) did not differ by place of birth (Fig. 1). However, non-US birth status was associated with lower MHS receipt among survivors of cancer with $K6 < 13$ (5.61% vs 8.15%, AOR 0.67, 95% CI 0.49–0.92, $P = 0.013$), and there was a greater disparity among those with $K6 \geq 13$ (9.43% vs 37.8%, AOR 0.19, 95% CI 0.08–0.45, $P < 0.001$) ($P_{\text{interaction}} = 0.002$; Fig. 2).

DISCUSSION

In this large contemporary cross-sectional survey, though there was a similar distribution of mental distress in survivors of cancer based on birth status, non-US-born adults with severe mental distress ($K6 \geq 13$) were 81% less likely to receive MHS relative to US-born adults. To our knowledge, this is the first study to investigate the receipt of MHS among adult non-US-born cancer survivors.

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Table 1 Baseline characteristics and multivariable logistic regression models for mental distress and mental health services receipt

	Baseline char. N (%)	Kessler 6 score					MHS receipt				
		AOR	95% CI	P > t	K6 ≥ 13 (adj. %)		AOR	95% CI	P > t	Yes to MHS receipt (adj. %)	
Birth status											
US-born {Ref.}	13,437 (91.18)	1.00	—	—	—	4.16	1.00	—	—	—	9.39
Non-US-born	1,216 (8.82)	0.80	0.53	1.19	0.27	4.10	0.58	0.43	0.79	P<0.00	5.77
Kessler score*		NA	NA	NA	NA	NA					
K6 < 13 {Ref.}	14,017 (95.84)	NA	NA	NA	NA	NA	1.00	—	—	—	7.93
US-born {Ref.}	12,864 (91.78)						1.00	—	—	—	8.15
Non-US-born	1153 (8.23)						0.67	0.49	0.92	0.01	5.61
K6 ≥ 13	636 (4.16)	NA	NA	NA	NA	NA	4.36	3.39	5.61	P<0.00	35.33
US-born {Ref.}	573 (90.10)						1.00	—	—	—	37.80
Non-US-born	63 (9.91)						0.19	0.08	0.45	P<0.00	9.43
Age											
18–64 {Ref.}	6799 (51.81)	1.00	—	—	—	5.87	1.00	—	—	—	12.44
65–74	4010 (25.59)	0.45	0.34	0.60	P<0.00	2.63	0.52	0.43	0.62	P<0.00	6.88
≥ 75	3844 (22.60)	0.22	0.16	0.30	P<0.00	1.96	0.27	0.21	0.34	P<0.00	3.82
Sex											
Male {Ref.}	5877 (42.22)	1.00	—	—	—	3.43	1.00	—	—	—	8.24
Female	8776 (57.78)	1.28	1.02	1.61	0.03	4.69	1.12	0.96	1.32	0.15	9.67
Race											
White {Ref.}	12,701 (88.77)	1.00	—	—	—	4.17	1.00	—	—	—	9.35
Non-white	1952 (11.23)	0.64	0.47	0.87	P<0.00	4.07	0.67	0.53	0.85	P<0.00	6.87

*K6 ≥ 13 is validated and associated with severe mental illness⁴

**The models were also adjusted for family income-to-poverty ratio (< 1.00 [referent] vs 1.00–1.99 vs 2.00–3.99 vs ≥ 4.00), insurance status, (insured [referent] vs uninsured), highest education level attained, (less than high school [referent] vs some high school vs high school diploma/GED vs some college vs college degree or greater), marital status (separated/widowed [referent] vs married/living with partner), US geographic region, (Northeast [referent] vs Midwest vs South vs West), self-reported health status, (excellent vs very good vs good vs fair vs poor [referent]), time from cancer diagnosis (≤ 5 years [referent] vs ≥ 6 years), and comorbidity score (0 [referent] vs 1 vs 2 vs 3 vs 4 vs 5 comorbid conditions)

The disparity in MHS receipt among the non-US-born adults with cancer may be due to several factors including barriers to care, cultural differences in seeking MHS, and stigma around mental illness in immigrant communities.⁵ These data suggest that immigrant survivors of cancer who suffer from severe mental distress may be at greater risk not receiving appropriate MHS. This disparity could lead to subsequent adverse outcomes, given the association between mental illness and worse cancer-specific outcomes.¹ This disparity is actionable at both the provider and society levels: increased efforts are needed to screen for mental illness and the need for MHS in immigrant populations. Further efforts to assess and target reasons for this disparity—including cultural stigma, linguistic barriers, and financial hindrances to care—are keys.

A notable limitation is that the NHIS survey is only administered in English and Spanish, languages a significant portion

of immigrants in the US may not use, and therefore, the reported disparities are likely underestimated.

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Fig. 1 Prevalence of severe psychological distress in US and non-US survivors of cancer. *Survey question 1: “How often you felt sad / worthless / nervous / hopeless / restless that felt everything was an effort in the past 30 days?” Respondents selected from 4 possible answers for each question: “none of the time,” “a little of the time,” “some of the time,” “most of the time,” and “all of the time.” b Frequency of mental health service receipt among US and non-US survivors of cancer. *Survey question 1: “Have you seen or talked to a mental health profession in the past 12 months?” Survey question 2: “Were you born in the United States?” Respondents selected from “yes” and “no” for each survey question

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Compliance with Ethical Standards:

Conflict of Interest: Dr Mahal reported receiving grants from the Prostate Cancer Foundation, American Society for Radiation Oncology, and US Department of Defense outside the submitted work. Mr Arega

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