The interplay of psycho-social Determinants on Quality of Life among Hispanic, non-Hispanic Black, and Other Non-White Cancer Survivors

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Introduction

Adherence to physical activity   and nutrition guidelines   is poor among all cancer survivors; however, significant racial/ethnic disparities exist. Hispanic and NHB people with cancer diagnoses are disproportionately affected by suboptimal body weight, diet, and sedentary lifestyle that impairs their QOL. Many of the racial/ethnic, socioeconomic, and geographic disparities in cancer mortality rates reflect differences in these modifiable risk factors. Hispanic and NHB cancer survivors may have unique challenges related to the provision of healthy lifestyle support and interventions for late effects, surveillance, and cancer care coordination. Collectively, these challenges disproportionately impact the QOL of racially diverse cancer survivors. However, limited research has focused on racially and ethnically minoritized populations to identify their unique QOL challenges and health behaviors11,24,25 after the completion of cancer treatment.

Methods

 This study aimed to explore psycho-social factors (i.e., socio-demographics, health insurance, stress) associated with Quality of life (QOL) and the degree to which self-reported access to healthcare and health behaviors (i.e., fruit and vegetable consumption and physical activity) mediates the effects of psycho-social factors on QOL among Hispanic, non-Hispanic Black (NHB) and other non-White cancer survivors.

   The mixed-methods study included NHB and Hispanic people (n=74) affected by cancer. This study only included quantitative part of data collected prospectively between June 2022- September 2023.

Table 1. Characteristics of participants

n= 74	Mean(±SD)
Age (years) range 25-87	58.26 (13.7)
	n (%)
Sex	
Female	68 (91.9)
Male	6 (8.1)
Race and Ethnicity *	
African American, Black	42 (56.8)
American Indian or Alaska Native	4 (5.4)
Hispanic, Latino, or Spanish Origin, including Puerto Rican	26 (35.1)
Not wish to report	2 (2.7)
Marital status	
Single/ Divorce	45 (60.8)
Married/living with a partner	28 (37.8)
Not reported	1 (1.4)
Educational level	
High school or less	25 (33.8)
Some college, technical school, or an Associate's degree	26 (35.1)
College graduate and above	23 (31.1)
Employment status	
Employed	38 (51.4)
Not employed / Homemaker	7 (9.5)
Retired	25 (33.8)
Not answered	4 (5.4)
Language spoken at home	
English Only	44 (59.5)
English and other languages (e.g., Spanish, Haiti)	20 (27)
Other language Only	10 (13.5)
Health insurance	
Only State health insurance (i.e., Medicare and Medicaid with or without MassHealth)	37 (50)
Private insurance (without state insurance)	25 (33.8)
Private and one-state health insurance (e.g., Medicare, Medicaid)	10 (13.5)
No insurance	1 (1.4)
* 3 participants with mixed race; 2 participants declined to report it in the surveys	

Table 2. Cancer diagnosis and other health-related characteristics

| n= 74	n (%)
	Mean(±SD)
Time since cancer diagnosis (years)	3.3(1.3)
Cancer stage at the diagnosis	
Stage 0-1-2	49 (66.2)
Stage 3	16 (21.6)
Missing / not remember	9 (12.2)
Cancer Type*	
Breast cancer	58 (78.4)
Gastrointestinal cancers	12 (16.2)
Lung cancer	4 (5.4)
Cancer Treatment received *	
Surgery	70 (94.6)
Chemotherapy	51 (68.9)
Radiotherapy	39 (52.7)
Other chronic health conditions**	
No other diagnosed disease	35 (47.3)
At least one chronic condition (e.g., Diabetes, hypertension, heart disease)	27 (36.5)
Two or more chronic conditions	12 (16.2)
Menopausal status (only for women) (n=68)	
Yes	47 (79.1)
No	16 (23.5)
Missing	5 (7.4)
****Of these, 46 % had been diagnosed with diabetes or prediabetes; Participants may have received more than one type of cancer treatment.**	

Results

The mean scores of QOL were moderate for global health (59.4±21.4) and functional status (64.8±22.2) and low for symptom experience (33.6±19.4). Of the participants, 35.1 % (n=24) reported at least one problem experienced in accessing healthcare.

The average daily consumption of fruits and vegetables was 2.44±0.61 cup equivalents. Most participants had insufficient (37.8%) or minimal (47.3%) engagement in physical activity. Men and those with higher stress reported lower global health status. Those with higher stress levels were also more likely to have lower physical activity.

Those with private insurance and some college education were more likely to consume more fruit and vegetables. Self-reported access to healthcare did not mediate the association between any of the variables and the global health score of QOL.

Table 3. Health, health behavior and access to care related characteristics of participants
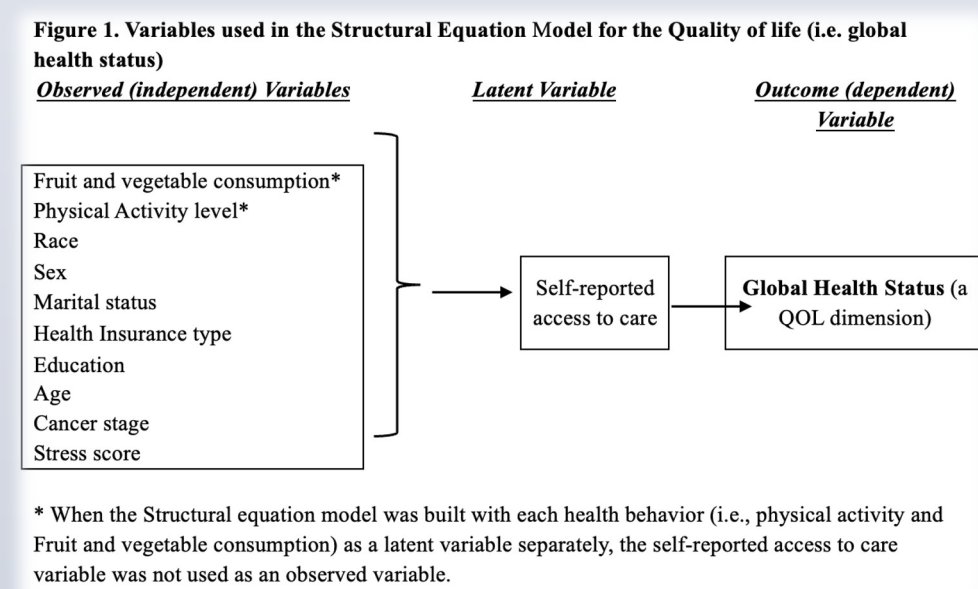
n= 74	Mean (±SD) or n(%)	Minimum-Maximum
Quality of life		
Functional status	64.8(22.2)	20-100
Symptom experience	33.6(19.4)	0-76.9
Global health status	59.4(21.4)	0-100
Perceived Stress (min and max ranged between 4-39)	19.3(7.6)	4-39
Low stress	18 (24.3)	
Moderate stress	47 (63.5)	
High stress	9 (12.2)	
Physical Activity level (weekly MET score)	1457.1(1814.0)	0-7164
Inactive	28 (37.8)	
Minimally Active	35 (47.3)	
More Active	11 (14.9)	
Diet / Nutrition Pattern (cup equivalents / per day)		
Predicted intake of fruits and vegetables, including legumes and excluding French fries	2.44 (0.61)	1.48-4.09
Predicted intake of vegetables, including legumes and excluding French fries	1.47(0.35)	0.98-2.54
Predicted intake of fruits	0.92(0.37)	0.45-2.21
Predicted intake of fiber	15.4(2.84)	10.0-26.01
Predicted intake of whole grains (ounce equivalents)	0.67(0.31)	0.33-1.85
Body Mass Index	31.5(9.53)	
Underweight (<18.5)	1 (1.4)	
Healthy weight (18.5-24.9)	13 (17.6)	
Overweight (25-29.9)	20 (27)	
Obesity (> 30)	23 (31)	
Missing	17 (23)	
Experiences in access to care due to lack of insurance or cost		
No access problem	48 (64.9)	
Yes, some access problems	26 (35.1)	
Skip a healthcare provider's appointment	4 (5.4)	
Cancel an appointment with a healthcare provider	5 (6.8)	
Delay a healthcare provider appointment	5 (6.8)	
Not purchasing medicine / not using the service	7 (9.5)	
More than one problem	5 (6.8)	
Difficulty Paying to Get Health Insurance		
Very difficult & Somewhat difficult	30 (40.5)	
Neither easy nor difficult	23 (31.1)	
Somewhat easy & very easy	20 (27.1)	
Missing	1 (1.4)	
Difficulty paying Health Insurance co-pays		
Very difficult & Somewhat difficult	33 (44.6)	
Neither easy nor difficult	22 (29.7)	
Somewhat easy & Very easy	19 (25.7)	
Difficulty To Pay basic needs such as food, housing, heating		
Very difficult & Somewhat difficult	41 (55.4)	
Neither easy nor difficult	20 (27)	
Somewhat easy & Very easy	13 (17.6)	

Table 54 Predictors of QOL of participants

Variables	Coefficient	S.E.	z	p-value
a. Direct effects of variables on QOL with consideration of self-reported access to healthcare				
Self-reported access to healthcare (had problem)	-5.152	4.654	-1.11	0.268
Fruit and vegetable consumption	-0.778	3.299	-0.24	0.813
Physical Activity (MET score)	-0.0005	.001	-0.39	0.700
Race (other than African American and Black)	2.686	4.184	0.64	0.521
Sex (male)	-19.912	8.886	-2.24	0.025
Marital status (married)	4.591	5.390	0.85	0.394
Health Insurance (private health insurance)	3.056	5.402	0.57	0.572
Education (some college degree)	-2.252	5.158	-0.44	0.662
Education (college degree)	-4.130	5.968	-0.69	0.489
Age	-0.151	.199	-0.76	0.446
Cancer stage (local advanced stage)	-8.209	5.371	-1.53	0.126
Stress score	-1.584	0.305	-5.19	0.000
a. Direct effects of variables on self-reported problem(s) with access to healthcare				
Fruit and vegetable consumption	-0.139	0.068	-2.03	0.043
Physical Activity (MET score)	-.00006	0.000	-2.60	0.009
Race (other than African American and Black)	-0.099	0.110	-0.90	0.369
Gender (male)	0.219	0.212	1.03	0.301
Marital status (married)	-0.144	0.107	-1.34	0.179
Health Insurance (private health insurance)	0.188	0.106	1.77	0.077
Education (some college degree)	0.218	0.140	1.55	0.120
Education (college degree)	0.052	0.141	0.37	0.712
Age	-0.010	0.003	-2.97	0.003
Cancer stage (local advanced stage)	-0.110	0.143	-0.77	0.442
Stress score	0.008	0.005	1.37	0.170
c. Indirect effects of variables on QOL with mediating effects of self-reported problem(s) with access to healthcare				
Fruit and vegetable consumption	0.718	0.779	0.92	0.357
Physical Activity (MET score)	0.00006	0.000	1.11	0.265
Race (other than African American and Black)	0.510	0.807	0.63	0.527
Gender (male)	-1.130	1.630	-0.69	0.488
Marital status (married)	0.742	0.920	0.81	0.420
Health Insurance (private health insurance)	-0.972	1.035	-0.94	0.347
Education (some college degree)	-1.123	1.141	-0.98	0.325
Education (college degree)	-0.269	0.780	-0.34	0.730
Age	0.054	0.052	1.03	0.303
Cancer stage (local advanced stage)	0.570	0.947	0.60	0.547
Stress score	-0.041	0.053	-0.77	0.441

Figure 1. Variables used in the Structural Equation Model for the Quality of life (i.e. global health status)

Observed (independent) Variables — Fruit and vegetable consumption*, Physical Activity level*, Race, Sex, Marital status, Health Insurance type, Education, Age, Cancer stage, Stress score

Latent Variable — Self-reported access to care

Outcome (dependent) Variable — Global Health Status (a QOL dimension)

* When the Structural equation model was built with each health behavior (i.e., physical activity and Fruit and vegetable consumption) as a latent variable separately, the self-reported access to care variable was not used as an observed variable.

Conclusion

 A large proportion of cancer survivors have insufficient vegetable and fruit consumption and low levels of engagement in physical activity. Further research with a large sample is needed to explore the determinants of QOL of racially minoritized cancer survivors to address disparities that might not be explained by access to care.

There should be strategic focus on the improvement of health behaviors for NHB and Hispanic cancer survivors beyond the cancer diagnosis. Findings suggest tailored interventions should consider the interplay of psychosocial determinants to optimize health behaviors and QOL.

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