

Social support needs and cancer

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Overview

Defining social support needs, KP context

Research findings - Social support and treatment, clinical outcomes

Response to social needs in cancer and upcoming/proposed work

Social networks (*structural social support*) is the web of social relationships that surround an individual

Social ties (and frequency of contact)

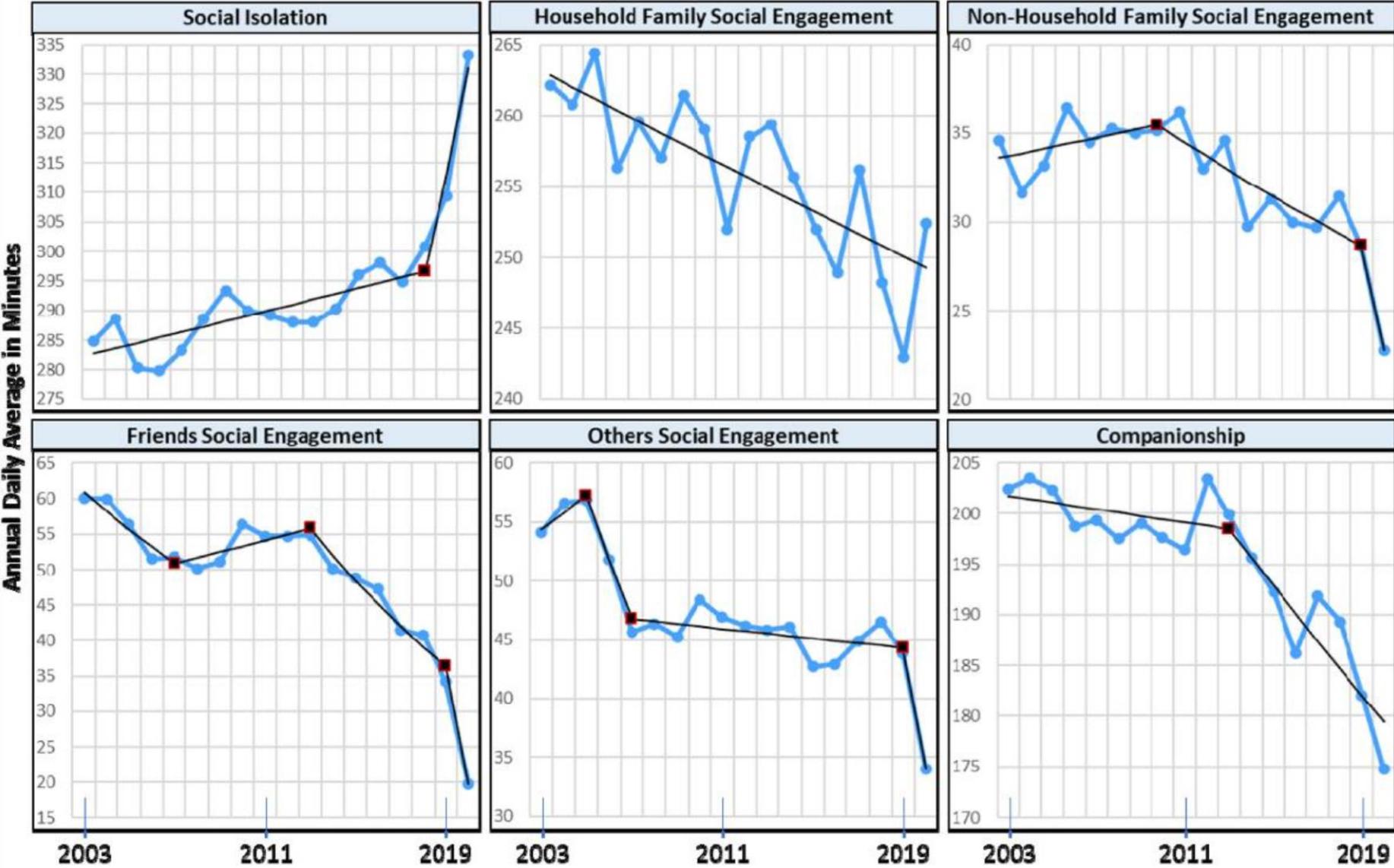


- Family
- Friends
- Religious
- Community
- Work, Online, etc.



~25% of the population ≥ 65 y indicate social isolation (Cudjoe, 2020)

Social isolation has increased since 2000



Social support (*functional social support*) is the perception and reality of the exchange of assistance through social relationships



Tangible/instrumental

**Emotional/
informational**

Affectionate

Positive interaction
(the availability of someone with whom to have fun, relax, and get one's mind off things for a while)

Sherbourne and Stewart, 1991

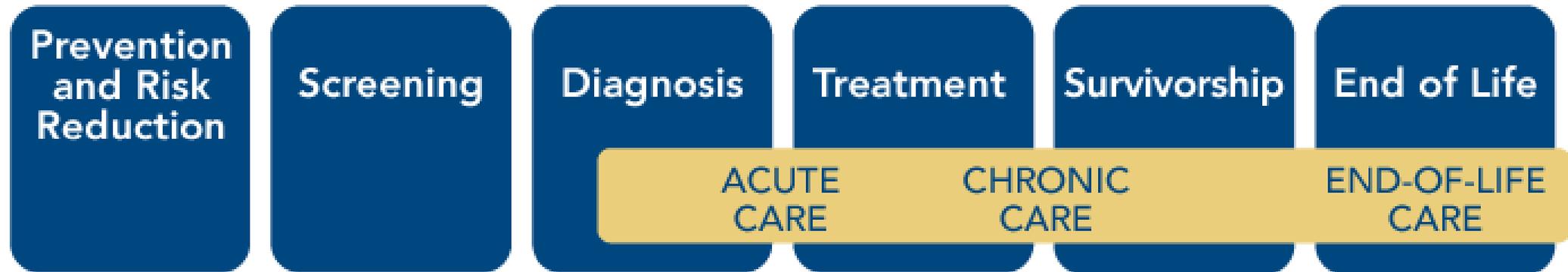
Terms: Social Determinants of Health (SDoH)/Social needs

The conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. (WHO)

Economic Stability	Neighborhood and Physical Environment	Education	Food	Community and Social Context	Health Care System
Employment	Housing	Literacy	Hunger	Social integration	Health coverage
Income	Transportation	Language	Access to healthy options	Support systems	Provider availability
Expenses	Safety	Early childhood education		Community engagement	Provider linguistic and cultural competency
Debt	Parks	Vocational training		Discrimination	Quality of care
Medical bills	Playgrounds	Higher education			
Support	Walkability				

Health Outcomes
 Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations

Social support matters to care across the cancer continuum



Social support in the time period after diagnosis may be critical to successful treatment management

Low social support related to higher prevalence of surgery delays (>30d), Pathways, N=3,983

	Level of Social Support			
	Highest tertile	Moderate	Lowest tertile	P-continuous*
N, Overall social support	1345	1374	1264	
Surgery delays>30 days	235	298	296	
PR	1.00	1.23	1.27	0.01
95% CI		(1.06-1.44)	(1.08-1.48)	
Type of social support				
N, Tangible	1294	1462	1227	
Surgery delays>30 days	222	311	296	
PR	1.00	1.23	1.34	0.01
95% CI		(1.05-1.43)	(1.14-1.56)	
N, Emotional/informational	1384	1304	1294	
Surgery delays>30 days	245	274	311	
PR	1.00	1.17	1.31	0.005
95% CI		(1.01-1.37)	(1.13-1.53)	

Adjusted for age at diagnosis, race/ethnicity, stage, menopausal status, estrogen receptor status, HER2 status, nodal status, comorbidity, and marital/partner status

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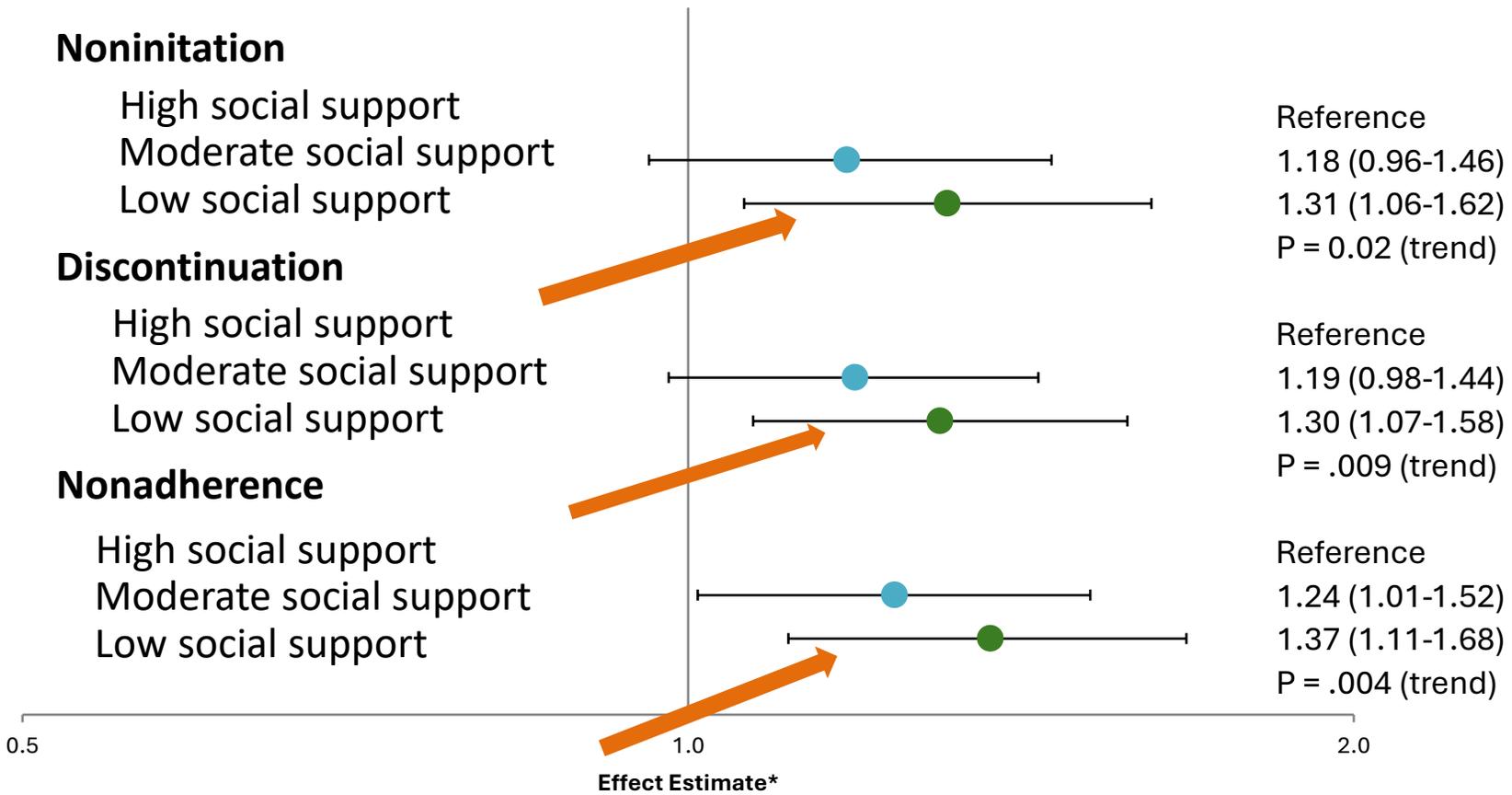
Low tangible support predicts higher risk of chemotherapy delays, Pathways, N=1,761

	Highest tertile	Middle	Lowest tertile	P*
Overall social support				
N	663	618	480	
Delay>90d from diagnosis	102	119	110	
PR	1.00	1.19	1.39	0.05
95% CI		(0.93-1.51)	(1.09-1.78)	
Delay>60d from surgery	167	156	138	
PR	1.00	0.98	1.14	0.55
95% CI		(0.81-1.18)	(0.94-1.39)	
Tangible support				
Delay>60d from surgery	160	158	143	
PR	1.00	0.95	1.17	0.04
95% CI		(0.80-1.13)	(0.98-1.41)	
College degree or higher				
Delay>60d from surgery	63	88	75	
PR	1.00	1.14	1.51	<0.001
95% CI		(0.85-1.51)	(1.12-2.03)	

Low tangible support predicts higher risk of chemotherapy delays, Pathways, N=1,761

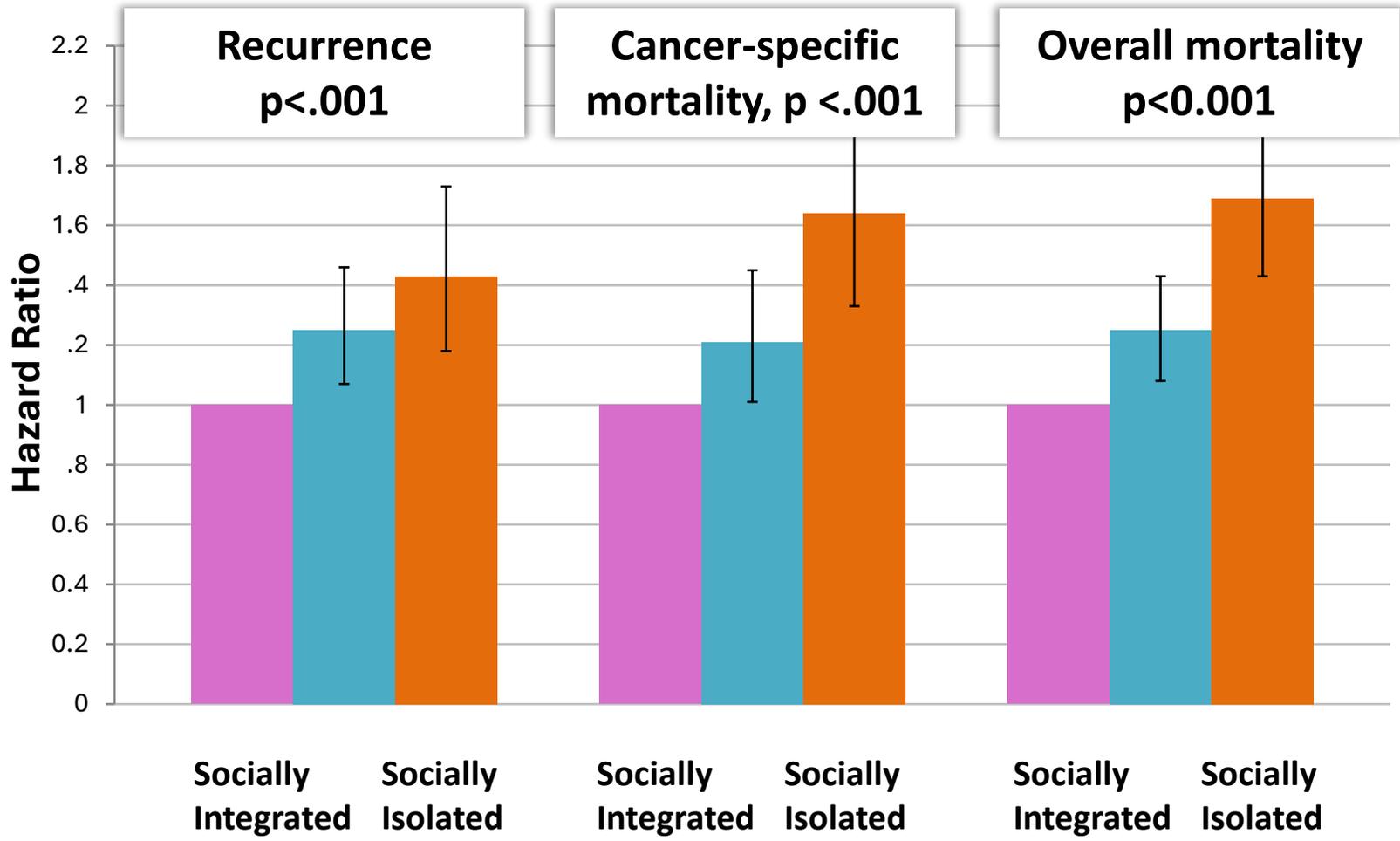
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Low social support predicts lower adherence to adjuvant endocrine therapy (AET), Pathways

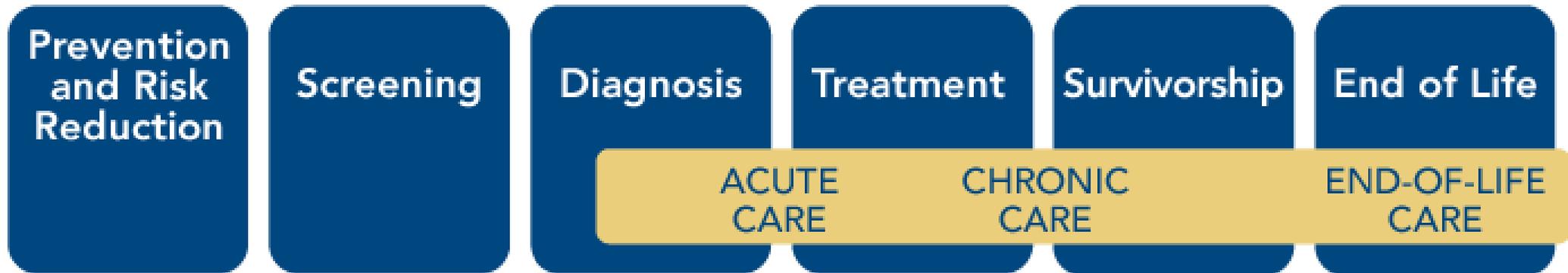


* The effect estimates are odds ratios (noninitiation) and hazard ratios (discontinuation and nonadherence); the horizontal axis is presented on a log scale.

Socially isolated women have poorer outcomes, After Breast Cancer Pooling Project (ABCPP) cohort, N=9,267



Social support matters to care across the cancer continuum



Survey measures (5% KPNC population; “increasing”)

Data in text available at KP since 2006 in Epic-BCCs (PI: Kroenke, CRN)

EHRsupport (PI: Kroenke, R01) as alternative to survey screening

EHRsupport Aims, Goals

1) Develop lexicon and extract social support data (NLP), develop indicators from unstructured data, validate vs. chart review

2) Develop a score based on (un)structured indicators validated against/trained on 'gold standard' social support survey data from the Pathways Study

3) Evaluate the score in the full population (N~45,000) with treatment and clinical outcomes

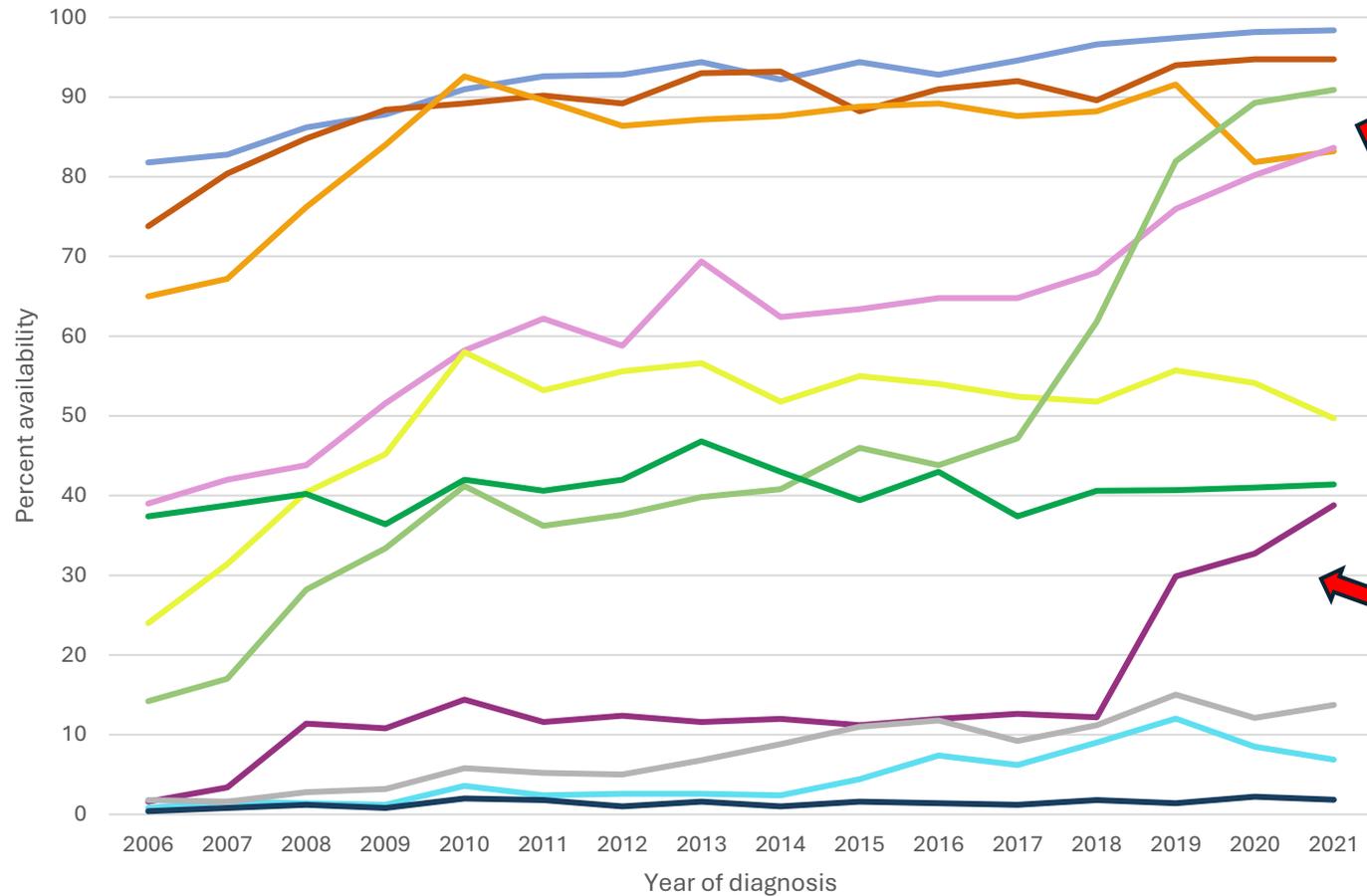
Goal: Develop a clinical tool to ID patients with low social support

Goal: Population-representative research on social support and cancer



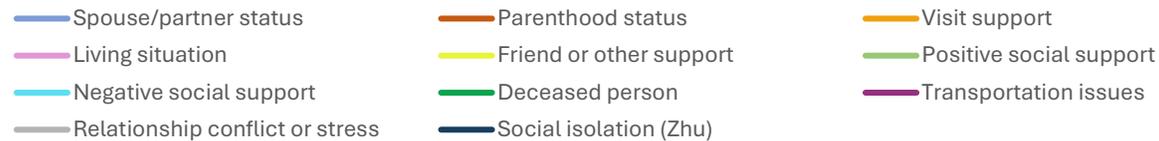
pathways
a study of
breast cancer
survivorship

EHRsupport-Social support data available in EHR text fields



Most available in 2021
 Spouse/partner (98%)
 Parenthood (children) (95%)
 Positive social support (91%)
 Visit support (83%)
 Living situation (83%)

Most increased since 2010s
 Positive social support
 Living situation
 Transportation issues



Performance vs. chart review highest for common terms

	Accuracy	Test (N=100)		
		F1	Recall	Precision
Spouse/partner	0.91	0.92	0.85	1.00
Parenthood status	0.91	0.94	0.95	0.93
Visit support	0.90	0.94	0.92	0.96
Living situation	0.93	0.76	1.00	0.61
Positive social support	0.84	0.85	0.76	0.98
Friend or other support	0.87	0.87	0.96	0.80
Deceased person	0.92	0.90	0.86	0.95
Transportation issues	0.85	0.35	0.80	0.22
Relationship conflict/stress	0.89	0.27	0.25	0.29
Negative social support	0.95	0.44	0.33	0.67

Preliminary: LASSO regression EHRsupport score related to treatment outcomes, N=2,402 (testing data set)

		EHRsupport score ^a			
	N	Tertile 1 (low SS)	Tertile 2 (mid SS)	Tertile 3 (high SS)	
Outcome					
Surgery delay^b	1973	674	681	618	
Events	429	168	142	119	
Odds ratio (OR) (95% CI)		1.40 (1.05, 1.87)	1.11 (0.83, 1.46)	ref	
Chemo delay from diagnosis^c	935	216	320	399	
Events	165	50	56	59	
OR (95% CI)		1.57 (1.00, 2.45)	1.14 (0.76, 1.71)	ref	
Chemo delay from surgery^d	891	205	305	381	
Events	57	18	19	20	
OR (95% CI)		1.59 (0.79, 3.22)	1.09 (0.56, 2.11)	ref	
First treatment delay^e	2071	691	710	670	
Events	446	172	149	125	
OR (95% CI)		1.44 (1.08, 1.91)	1.16 (0.88, 1.52)	ref	
AET noninitiation^f	1719	591	589	539	
Events	520	178	173	169	
OR (95% CI)		1.29 (0.97, 1.71)	1.09 (0.83, 1.42)	ref	
AET discontinuation^g	1199	413	416	370	
Events	569	224	189	156	
Hazard Ratio (HR) (95% CI)		1.32 (1.05, 1.65)	1.06 (0.85, 1.32)	ref	

Preliminary: EHRsupport score related to overall mortality, N=2,402 (testing data set)

EHRsupport score ^a				
	N	Tertile 1 (low SS)	Tertile 2 (mid SS)	Tertile 3 (high SS)
Outcome				
Recurrence	2086	696	716	674
Events	294	76	101	117
HR (95% CI)		0.96 (0.71, 1.32)	0.98 (0.75, 1.29)	ref
BC mortality	2086	696	716	674
Events	231	61	80	90
HR (95% CI)		1.07 (0.76, 1.52)	1.01 (0.74, 1.37)	ref
Overall mortality	2086	696	716	674
Events	489	189	154	146
HR (95% CI)		1.29 (1.02, 1.63)	0.98 (0.78, 1.24)	ref
Any invasive event	2086	696	716	674
Events	715	264	233	218
HR (95% CI)		1.23 (1.01, 1.50)	0.99 (0.82, 1.20)	ref

EHRsupport and MOS-SS measure, r=0.25, p<0.001

Strengths and limitations

High availability of data

'Gold standard' social support survey data

Score related to outcomes of interest (>MOS-SS measure)-clinicians may document info particularly related to clinical outcomes

Score based on MOS-SS but info differs (structural vs. functional)

Unrelated to recurrence, BC-specific mortality in testing sample

Responding to social support needs

Historically: document in EHR and refer patients to social worker

Alternative approaches

Cancer Support Line (Misha McKinney and Tatjana Kolevska)

Social prescribing (Alan Siegel)

Cancer Support Line

Evaluation needed

EHRsupport could be used to help ID/risk differentiate patients

Research grant applications

NCI: Evaluate CSL and expand tool to include material needs

NCI: LLMs and expand EHRsupport to full cancer population

Social prescribing

Connect patients to non-clinical, community-based interventions such as arts, nature, movement, service, and social connection (WHO)



Gives a structured pathway for healthcare providers to address the **social determinants of health**.



Bridges the gap between **clinical** and **social care**



Empowers people to be **co-creators** in improving their own health and wellbeing

How does social prescribing work?

A healthcare worker sees a need and refers the patient to a link worker



The link worker connects with the individual to understand their needs and interests



The link worker connects the patient to a wide range of community supports and follows up

What kinds of social prescriptions are there?

Together with a link worker, clients are encouraged to co-create social prescriptions that help them to develop their interests, goals and gifts while connecting with their community.

Social prescribing

NAM Health Longevity Global Competition Catalyst Award (PI: Siegel)

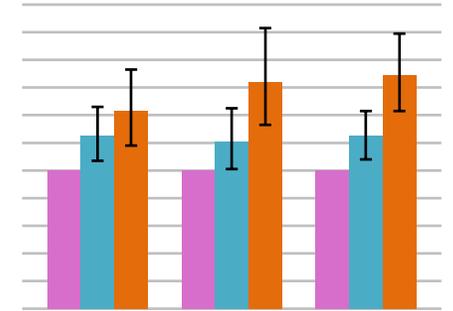
N=100 patients 65+y with depression, anxiety, PTSD, substance abuse diagnosis, high risk hospitalization score (English or Spanish-speaking)

Social prescription with link worker

Pre- and post—loneliness, depression, anxiety, health utilization

Summary

- **Low social support related to treatment, clinical outcomes**
- **EHR support promising in breast cancer; work needed to further develop and assess its utility**
- **Evaluation needed to assess efficacy of approaches to address social support needs**



Thank you!
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