People, places and breast cancer in Pathways: Social isolation, social support and breast cancer survivorship

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Pathways Forum, September 21, 2023
Overview

Concepts
Population studies including Pathways
Implications
Concepts
## Terms: Social Determinants of Health

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)

<table>
<thead>
<tr>
<th>Economic Stability</th>
<th>Neighborhood and Physical Environment</th>
<th>Education</th>
<th>Food</th>
<th>Community and Social Context</th>
<th>Health Care System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td>Housing</td>
<td>Literacy</td>
<td>Hunger</td>
<td>Social integration</td>
<td>Health coverage</td>
</tr>
<tr>
<td>Income</td>
<td>Transportation</td>
<td>Language</td>
<td>Access to healthy options</td>
<td>Support systems</td>
<td></td>
</tr>
<tr>
<td>Expenses</td>
<td>Safety</td>
<td>Early childhood education</td>
<td>Community engagement</td>
<td></td>
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<td>Debt</td>
<td>Parks</td>
<td>Vocational training</td>
<td>Discrimination</td>
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<tr>
<td>Medical bills</td>
<td>Playgrounds</td>
<td>Higher education</td>
<td></td>
<td></td>
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<tr>
<td>Support</td>
<td>Walkability</td>
<td></td>
<td></td>
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<td>Provider availability</td>
</tr>
</tbody>
</table>

**Health Outcomes**

Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status, Functional Limitations
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.
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Objective measure of social isolation, integration
Social support (*functional social support*) is the perception and reality of the exchange of assistance through social relationships.
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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
Population studies
Social isolation higher breast cancer mortality, Nurses’ Health Study, N=2,835

<table>
<thead>
<tr>
<th>Category of Social Networks</th>
<th>Integrated</th>
<th>2</th>
<th>3</th>
<th>Isolated</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>1315</td>
<td>496</td>
<td>826</td>
<td>198</td>
<td></td>
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<tr>
<td>All-cause</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Hazard Ratio (HR)</td>
<td>1.00</td>
<td>0.73</td>
<td>0.93</td>
<td>1.66**</td>
<td>0.40</td>
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<tr>
<td>Breast cancer</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>HR</td>
<td>1.00</td>
<td>0.91</td>
<td>1.24</td>
<td>2.14**</td>
<td>0.06</td>
</tr>
<tr>
<td>Other causes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HR</td>
<td>1.00</td>
<td>0.58</td>
<td>0.70</td>
<td>1.25</td>
<td>0.42</td>
</tr>
</tbody>
</table>

*p-trend, **p<0.05

Kroenke, et al., J Clin Oncol, 2006
Socially isolated (small networks) had worse outcomes, After Breast Cancer Pooling Project cohort, N=9,267

Kroenke et al., Cancer, 2016

Not explained by depressive symptoms or lifestyle behaviors
Small, unsupportive networks related to poorer survival, LACE, N=2,264

Kroenke et al., Breast Cancer Res Treat, 2013
Socially isolated women have poorer quality of life, Pathways

‘Positive interaction’ predicted:
• Less nausea (p<0.01)
• Lower levels of pain (p<0.01)
• Less need for bed rest (p<0.01)
• Higher levels of energy (p<0.01)
Lifestyle and treatment factors don’t explain the association

Adjusted additionally for lifestyle factors and treatment

p-trend < 0.001

Kroenke et al., Breast Cancer Res Treat, 2013
Low social support predicted lower adherence to adjuvant endocrine therapy, Pathways

Noninitiation
- High social support
- Moderate social support
- Low social support

Discontinuation
- High social support
- Moderate social support
- Low social support

Nonadherence
- High social support
- Moderate social support
- Low social support

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

Kroenke et al., Breast Cancer Res Treat, 2018
Low social support resources predict higher odds of surgery delays > 30 days, Pathways

<table>
<thead>
<tr>
<th>OR</th>
<th>Lowest tertile</th>
<th>Middle</th>
<th>Highest</th>
<th>Lowest tertile</th>
<th>Middle</th>
<th>Highest</th>
<th>Isolated</th>
<th>Moderately integrated</th>
<th>Socially integrated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Personal social support</td>
<td>Supportive clinical communication</td>
<td>Social integration</td>
<td></td>
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</table>

Kroenke et al., SBM and ASPO, 2020
Overview

Concepts

Population studies

Implications
Implications of the research
Survival in metastatic breast cancer patients unaffected by social support groups

Kaplan-Meier Survival Curves for Women Assigned to the Intervention Group and the Control Group

No difference

P=0.72

Years after Randomization

Proportion Surviving

0.0 0.2 0.4 0.6 0.8 1.0

0 2 4 6

Control Intervention

Goodwin, NEJM, 2001
Social support RCT also failed to improve CVD outcomes

Berkman et al, JAMA, 2003
Emotional social support interventions only one means of providing support

May improve quality of life (QoL) in some patients (reduce in others)

Interventions haven’t improved:
  - breast cancer survival
  - cardiovascular disease outcomes
  - smoking quit rates

Social support matters but that knowledge does not point the way to best solutions
Ways to increase social support (APA)

• Cast a wide net
• Be proactive
• Take advantage of technology
• Follow your interests
• Seek out peer support
• Improve your social skills
• Ask for help (including professional help)

American Psychological Association
https://www.apa.org/topics/stress/manage-social-support
What compromises social support

“Deterioration”
- Childhood trauma
- Chronic (financial) stress
- Discrimination

Inhibition
- Social isolation/loneliness
- Lack of support systems
- Poor quality relationships
- Stigmatization
Hypothesis: Systems can augment social support

Understanding community factors that contribute to feelings of social support could inform policies to improve social support.

In health systems, collecting information on social support in may lead to higher support in patient populations.
ENCLAVE (ENCLAVE), NCI grant, PI: Kroenke

Understand the role of social networks in associations between immigrant status, lifestyle, and breast cancer outcomes in pooled study (*Pathways Study*, LACE, CHI)

1) Develop data on sociocultural institutions

2) Examine associations of immigrant status and lifestyle, examining mediation by social networks

3) Evaluate associations between immigrant status and BC outcomes evaluating mediation by social networks, lifestyle
1) Assemble data from the EHR on social support

2) Develop EHR-SUPPORT score from EHR data and validate against social support measures (*Pathways Study*)

3) Evaluate associations between EHR-SUPPORT, treatment, and mortality, overall and by race/ethnicity

**Electronic Health Record Social support Patient Risk Tool (EHR-SUPPORT), NCI grant, PI: Kroenke**

**Develop tool to ID patients at risk of low social support**

Exploratory aim: Implementation workflow and IT requirements
Implications for breast cancer survivors

Individual level
• Build supportive networks before you are diagnosed
• Live in supportive communities
• Engage in the community
• Seek support after you are diagnosed (peer/online support groups, ACS Road to Recovery, Thrive Local)
• Keep participating in research

Systems (health systems and community) level
• Document social support, social worker referral, build resources
• Nurse/peer navigation and coordination of care
• Determine community factors that increase social support
• Community/policy action
In summary

- Supportive social networks matter for breast cancer survival, QoL, optimal treatment
- Opportunities as individual to improve support
- Research into how systems can increase social support in populations needed
- Participation in Pathways informs this work

Thank you!

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