



BC Cancer Agency

CARE & RESEARCH

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**Sociobehavioural
Research Centre**
Translating Research into Practice

Cancer Survivorship: Key Concepts, Issues & Interventions

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Defining Cancer Survivorship

- ‘Seasons of survival’: acute, extended, permanent
 - “Survivorship should be studied as a phenomenon in itself rather than as a byproduct or afterthought of basic research on cancer treatment” (Mullan 1985)
 - ‘Survivorship’ is distinct phase in cancer trajectory
 - Phase following primary treatment, lasting until cancer recurrence or end of life
 - Post-treatment phase has been relatively neglected in advocacy, education, clinical practice & research
 - Key areas of survivorship research: *physical, psychosocial & economic* sequelae of cancer diagnosis & treatment
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Physical Sequelae

- Survivors more likely to report being in fair/poor health than general population
 - Long-term & late effects caused by cancer treatments
 - cardiac disease
 - second malignant neoplasms
 - organ dysfunction
 - reduced growth & development
 - decreased fertility
 - impaired intellectual function
 - Common long-term effects
 - fatigue
 - cognitive impairment
 - pain
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Physical Sequelae of Most Prevalent Cancers

| Cancer site | Second primary | Treatment complications | Physiologic alteration |
|--------------------|--|---|--|
| Breast | High-risk: breast, ovarian & colorectal cancers | Arm edema, premature menopause, Chemo-related reduced cognitive functioning | Menopausal symptoms, weight gain, osteoporosis, fatigue |
| Prostate | Bladder cancer | Sexual dysfunction, incontinence, radiation proctitis, impaired cognitive function | Impotence, urinary incontinence & leakage diarrhea fatigue |
| Colorectal | High-risk: colorectal, endometrial cancer with HNPCC mutations | Radiation proctitis Ostomy issues: stomal prolapse, skin-related problems, stenosis of stomal opening. | Colostomy, incontinence, Sexual dysfunction, bladder dysfunction |

Psychosocial Sequelae

- Prevalence of clinically significant distress exceeds general population norms
 - From 30-50% of cancer survivors experience significant distress in period following cancer treatment
 - Psychosocial distress & problems with adjustment most intense during first 1-2 years following treatment
 - BUT psychological adjustment & QoL ultimately become indistinguishable from general population
 - Rather than producing global dysfunction, cancer may produce “islands of disruption”
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Risks for Psychosocial Sequelae

- Although majority adjust well, significant subset at risk for high distress & life disruption
 - Little known regarding factors that predict higher risk for psychosocial problems after cancer treatment
 - However, certain factors consistently correlate with poorer psychosocial & QoL outcomes
 - pre-existing psychosocial, family or marital stress
 - treatment-related side effects
 - presence of co-morbidities
 - lower income
 - being single
 - younger age
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Economic Sequelae

- Economic burden of cancer
 - Insurance concerns
 - Work concerns
 - Between 62%-85% of working-age cancer survivors return to work
 - Most survivors experience financial pressure to return to work
 - Issues faced at work
 - Subtle discrimination
 - Fatigue
 - distress at not performing to prior capacity
 - Job flexibility essential for survivors who return to work
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Key components of Survivorship Care

- 1) Prevention & detection of recurrent & new cancers & other late effects
 - 2) Surveillance for cancer spread, recurrence, or 2nd cancers; assessment of medical & psychosocial late effects
 - 3) Intervention for consequences of cancer and its treatment
 - 4) Coordination between specialists & primary care providers to ensure all of survivor's health needs are met
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Survivorship Interventions

- 1234 citations generated through Pubmed search
 - Inclusion criteria
 - Published between 1997-2007
 - Study population included survivors over 18
 - Controlled intervention study
 - Must assess efficacy of intervention aimed at cancer-free survivors in *post-treatment* phase
 - 31 studies assessed for inclusion
 - 14 studies deemed relevant
 - 17 studies excluded
 - 13 intervention studies & 1 systematic review assessed
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Characteristics of Intervention Studies

- 4 exercise interventions (2 Canada, 2 USA)
 - 1 review of exercise interventions
 - 8 psychosocial interventions (all USA)
 - 10 interventions on breast cancer survivors (BCS)
 - 2 interventions on prostate cancer survivors (PCS)
 - 2 interventions/reviews on various cancer sites (but BCS *at least* 60% of study population in each case)
 - 4 interventions targeted sub-populations of cancer survivors
 - 1 intervention targeted survivors & partners
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Exercise Interventions

| | | | |
|---|---------------------|---|---|
| Courneya et al. 2003 RCT Canada | 52 BCS | Exercise intervention: Trained 3 x wk for 15 wks on cycle ergometers (15 mins wks 1-3 then by 5 mins every 3 wks to 35 mins for wks 13-15). | Peak oxygen consumption ↑ in exercise grp & ↓ in control group. Overall QOL ↑ in control grp which correlated w change in peak oxygen consumption |
| Culos-Reed et al. 2006 Pilot RCT Canada | 38 cancer survivors | 1) wait-control condition 2) intervention – 75 min yoga classes held over 7 wks. | Sig. dif b/t intervention & control in global QOL, emotional function & diarrhea. Positive trends in emotional irritability, gastrointestinal symptoms, cognitive disorganization, mood, tension, depression & confusion. |
| Galvao & Newton 2005 Review | 8 exercise studies | Interventions included: 1) cardiovascular programs 1) resistance training 2) flexibility training | Prelim + phys. & psych. benefits from exercise when undertaken after cancer treatment. |
| Mustian et al. 2006 Pilot RCT USA | 21 BCS | 1) 12-week tai chi chuan exercise group (TTC) 3 X wk for 1 hr. 2) 12-week standard psychosocial support typical (PST) care control grp. | TCC group demonstrated significant ↑ in functional capacity whereas PST group showed significant ↑ in flexibility only. |
| Pinto et al. 2005 RCT USA | 86 BCS | Intervention grp: 12-wk, home-based physical activity (PA) program. Encouraged to exercise ≥10 mins on ≥2 days/wk & ↑ to 30 mins per/day on ≥5 days/wk. | Post-treatment comparisons revealed sig. ↑ in vigor & ↓ in fatigue in PA grp. Positive trend in intervention effects on overall mood & body esteem. |

Cognitive/Behavioural Interventions (CBI)

| SOURCE | SAMPLE | INTERVENTION | OUTCOMES |
|---|----------------------------------|---|--|
| Antoni et al. 2006 <i>RCT</i> USA | 199 BCS | Grp intervention met weekly for 10 2-hr sessions. CBSM techniques, including in-session experiential exercises & out-of-session assignments. Follow up: 3 mths, 6 mths | ↓ social disruption & ↑ emotional well-being, positive states of mind, benefit finding, positive life-style change up to 6 mths. Several effects ↑ from 3 to 6 mth follow up. |
| Campbell et al. 2006 <i>Pilot RCT</i> USA | 30 Af Am prostate CS & partners | Coping Skills Training Intervention: 6 1-hr telephone sessions for training in coping skills No follow up | <i>Patients:</i> sig. ↑ QOL in bowel & urinary function. Marginally sig. effects for sexual & hormonal symptom domains. No sig. diff on general QOL or self-efficacy measures. <i>Partners:</i> No stat. sig. differences. Trend towards ↓ depression & fatigue & ↑ vigor |
| Mishel et al. 2005 <i>RCT</i> USA | 509 long-term white & Af. Am BCS | Cognitive strategies delivered via tape on coping responses to threat recurrence + behav. strategies in self-help manual to provide management skills - guided over 4 wkly phone calls Follow up: 6 mths | ↑ in cognitive reframing - most pronounced for Af-Am. Sig. ↑ in patient-provider communication for Af. Am women. Sig. difference over time in social support satisfaction – most pronounced for white women. Sig. ↑ in coping skills, behavioural activities, & diverting attention for Caucasian women. Sig. ↓ in catastrophizing for Af. Am women. |
| Penedo et al. 2006 <i>RCT</i> USA | 191 prostate cancer survivors | Grp intervention. Cognitive-behavioural stress management: 2 hrs/wk x 10 wks Follow up: 2-3 wks after intervention | Sig. ↑ in QOL, stress management & benefit finding |

Psycho-educational Interventions (PEI)

| SOURCE | SAMPLE | INTERVENTION | OUTCOMES |
|--|-----------------|--|---|
| Meneses et al. 2007 <i>RCT</i> USA | 256 BCS | 3 sessions (60-90 mins) focusing on ed about phys, personal/emot.changes, psych distress. Sup. by written & audio materials + 5 mth Follow-up sessions to eval symptoms, reinforce learning, provide support. Follow up: 3, 6 months | Improved QOL at 3 & 6 mths |
| Scheier et al. 2005 <i>RCT</i> USA | 252 younger BCS | <i>Education arm</i> – 4 sessions x 4 mth. Content: talking to kids, life after diag. & treatm'nt, rel'nships & intimacy, hormones, heredity & BC <i>Nutrition arm</i> – 4 sessions x 4 mth. Content: info fruits, vege, cooking demos, eating out. Follow up: 9 mths | 2 active treatment arms had sig. ↓ depressive symptoms & ↑ physical functioning by 9 mths. |
| Stanton et al. 2005 <i>RCT</i> USA | 558 BCS | <i>Video intervention (VI)</i> : letter, manual & video on re-entry challenges in 4 domains (phys. hlth emotional well being, rel'nships, life perspectives) <i>PE intervention</i> : VI + 1 in-person session (80 min) on concerns in 4 domains & action plan to session Follow-up: 2, 6, 12 mths | No sig. effect emerged on cancer-specific distress, but PE produced ↓ in outcome than control at 6 mths for patients feeling more prepared for re-entry. Diff. not apparent at 12 mths. |

Other Interventions

| SOURCE | SAMPLE | INTERVENTION | OUTCOMES |
|--|---------------------------------|---|---|
| Ganz et al. 2000 <i>RCT</i> USA | 76 BCS with menopausal symptoms | Assessment of 3 target symptoms (hot flashes, vag. dryness, incontinence) followed by indiv. plan of ed, counseling, pharma/behav.l interventions, psychosocial support, referrals, follow-up. Follow up: 2 months, 4 months. | Stat. sig. improvement in menopausal symptoms & sexual functioning. No sig. change in vitality. Measurable improvement in general QOL not demonstrated. |
| Stanton et al. 2002 <i>RCT</i> USA | 60 BCS | 20 min writing task x 4 sessions: <i>Condition 1:</i> deepest thoughts/feelings re BC <i>Condition 2:</i> positive Thoughts/feelings re: experience with BC <i>Condition 3:</i> facts of BC experience Follow up: 1, 3 months | Sig. condition X cancer-related avoidance interaction. C1 effective for women low in avoidance & C2 effective for women high in avoidance. C1 & C2 had sig. effects on self-reported somatic symptoms & medical appts for side effects. Compared with C3, C2 reported sig. ↓ phys. symptoms & C1 & C2 had sig. ↓ fewer medical appointments for cancer-related morbidities. |

Limitations of Studies

- Many studies lack proper control group
 - Many studies did not conduct post-intervention follow up
 - Many studies had small sample size
 - Most studies were with white, middle class breast cancer survivors
 - Not generalisable to other populations of survivors
 - Most interventions were targeted to 'general' cancer survivor
 - They did not specifically target those more likely to have problems
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Models of Care – Consultative Model

- Primary oncology team refers survivor for one-time visit with staff specialising in survivorship issues
 - At visit:
 - oncology medical summary & systematic plan for surveillance for late effects developed (SCP)
 - counselling focused on psychosocial needs & risk reduction provided
 - PROS: highly cost effective
 - CONS: does not move substantively beyond survivorship care plan
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Models of Care – Shared Care Model

- Primary care clinician (PCC)
 - Assumes responsibility for feasible aspects of care
 - refers patients to specialists for periodic re-evaluations & to address issues requiring expertise
 - Specialist
 - provides guidance & treatment in area of expertise
 - Keeps PCC informed of treatment plan
 - Returns patient to PCC for implementation of plan & other health needs
 - PROS: integrates primary & specialist care, cost effective
 - CONS: difficult to implement in practice
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Models of Care – Nurse Led Model

- At predetermined time after completion of therapy, survivors transitioned to nurse for follow-up
 - nurse re-establishes communication with primary care physician to initiate shared care of survivor
 - After period of time survivor formally transitioned back to primary-care physician
 - Nurse practitioner periodically communicates with GP & provides updated guidelines for follow-up care
 - PROS: generates relatively low costs, nurses well suited to providing survivorship care
 - CONS: Nurses in short supply, survivors may prefer dealing with physicians
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Models of Care – Specialised Survivor Program

- Specialised, multidisciplinary survivor program based on existing paediatric cancer survivorship models
 - Program team consists of oncologists, oncology nurse practitioners, social workers, OTs, psychologists, administrators & network of consulting physicians
 - Risk-based care provided in survivor clinic through team effort
 - PROS: comprehensive, coordinated care for range of issues survivors face
 - CONS: resource & labour intensive
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Cancer Survivorship Initiatives in Canada

- CIHR Palliative & E/OL Team: 2004-2009
 - CIHR Team for Supportive Cancer Care: 2007-2012
 - CPAC Rebalance Focus Survivorship Working Group
 - NCIC Survivorship program announcement: 2008
 - BCCA/SFU Chair in Health Disparities: 2007-2012
 - Alberta Cancer Board/CCS Chair in Psychosocial Oncology
 - Princess Margaret Hospital Chair in Breast Cancer Survivorship
 - International Panel for Cancer Survivorship planned for 2008
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Conclusion

- Survivorship is distinct phase in cancer trajectory
 - Characterised by physical, psychosocial & economic sequelae
 - These sequelae are not discrete - they intersect
 - Not all survivors equally at risk for these effects
 - Solid evidence base regarding most effective survivorship interventions does not presently exist
 - More intervention studies focusing on populations at risk for distress are needed
 - A number of promising models of care exist - although efficacy has not been established
 - Cancer survivorship is 'on the map' in Canada
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