A Controlled Study of Teenagers' Adaptation to Cancer in Their Fathers

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Background

According to the Cancer Registry of Norway:

- 34,250 Norwegian children aged 0-18 years had one or both parents with cancer by January 1, 2008
- 2,075 families with children 0-18 years, mother (N=1,159) or father (N=919) were diagnosed with cancer in 2007
- These families had in all 3,481 children aged 0-18 years.
  (Syse et al. 2012)

- Conclusion: a considerable number of families, parents, and youngsters are affected by cancer each year
Cancer influence

- COMMUNICATION
- PERSON WITH CANCER
- CONDITIONS AND RELATIONSHIPS
- FUTURE AND PLANS
- ECONOMY
- HOME
- WORK

National Resource Center for Late Effects after Cancer Treatment
Consequences of parental cancer

- Parental cancer has been associated with symptoms of distress in the children

- Most children and teenagers have normal stress reactions to such events

- Some children and teenagers react strongly and develop emotions like anxiety, depression, confusion, sadness, anger and feelings of uncertainty and loneliness

- A need for prevention and intervention among teenagers must be based on sound empirical knowledge of their psycho-social situation
Review of studies (Krattenmacher et al., 2012) I

28 studies, 2896 families, children 0-18 years:
• 5 of “high” methodological quality, 13 “moderate”, 9 “low”

- Selection bias of participating families (breast cancer, middle and high socio-economic status)
- Low response rate
- Lack of information on selective response
- Absence of clinical effect sizes
- Used a broad range of instruments
Review of studies (Krattenmacher et al., 2012) II

- Cancer in mothers is associated with mental distress in their teenagers
- No evidence of cancer related factors, except disease status
- Good family functioning indicates better adjustment
- Parent’s depressive mood indicates worse adjustment
- Effects of cancer in fathers have hardly been studied
AIMS OF THIS STUDY

• Explore the psychosocial adaptation in teenage boys and girls living with a parent who has been diagnosed with cancer

• Compare their adaptation to teenagers who lived with cancer-free parents

• Identify cancer-specific effects rather than general effects

• Sex differences in adaptation related to having a mother or a father with cancer were investigated separately

• Presenting findings of having a father with cancer
Cross sectional study

- Data from the population-based Health Survey of Nord-Trøndelag County of Norway (HUNT II and Young-HUNT)

- Population-based questionnaire study

- Using data from both substudies represent an opportunity to overcome some methodological problems as selection bias

- Parents and teenagers took part in these studies separately

- We were able to investigate the psychosocial situation in teenagers based on information given independently
Methods

• **Young-HUNT (1995-1997)**
  – All students in junior high and high schools (13-19 years)
  – 8,771 (90 %) delivered questionnaires filled in at school (1995-1997)

• We identified parents and checked them up against the [Cancer Registry of Norway](www.ntnu/hunt)

• **HUNT- II (1995-1997)**
  – All 91,194 residents aged 20+ years invited
  – 66,140 participated (response rate 71 %) ([www.ntnu/hunt](www.ntnu/hunt))
  – 74 % of fathers with cancer participated in the HUNT-II
Characteristics of samples

- 120 parents had got their first and only invasive cancer diagnosis before their 143 teenagers took part in Young-HUNT
- Control teenagers of cancer-free parents was drawn based on age, sex and municipality of living (N=429)
- 61 fathers with cancer had 31 teenage sons and 37 teenage daughters participated in Young-HUNT
- 14 cancer diagnoses, majority with testicular cancer and melanomas
- Mean age of fathers was 49 years
- No significant differences in socio-demography or self reported health (except cancer) between case parents and control parents concerning HUNT-II
Questionnaire data and variables

- All teenagers filled in an extensive questionnaire covering physical and mental health, life style and socio-demographic factors.

- We selected 24 factors concerning adaptation for closer study and operationalized them all as dichotomies.

- Risk factor present (score 1) versus absent (score 0).

- An adaptation index was defined by the sum score of the 24 factors ranging from zero (excellent adaptation) to 24 (poor adaptation).
<table>
<thead>
<tr>
<th>24 Poor Adaptation Factors</th>
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<tr>
<td>1) Poor self-rated health</td>
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<td>2) Somatic stress symptoms</td>
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<td>3) Use of analgesics</td>
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<td>4) Use of sedatives</td>
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<td>5) Current smoking</td>
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<td>6) Physically inactive</td>
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<td>7) Dissatisfaction with life</td>
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<td>8) Fatigue</td>
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<td>9) Depression</td>
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<td>10) Low self esteem</td>
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<td>11) Insomnia</td>
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<td>12) Neuroticism</td>
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Teenage daughters adaptation

- **Case daughters (n=37) vs. case sons (n=31)**
  - Daughters reported significantly more anxiety and depression (p<0.005)
  - Daughters reported significantly lower self esteem (p<0.05)

- **Case daughters (n=37) vs. control daughters (n=213)**
  - Case daughters reported more dissatisfaction with life (p<0.05)
  - Case daughters reported significantly more anxiety and depression (p<0.005)
  - Case daughters reported more extreme weights (p<0.05)
    (self reported “very thin” or “very fat”)

These differences emerged among cases only, and they were therefore related to father’s malignancy.
Teenage sons with fathers with cancer

- We did not observe any significant differences in negative adaptation factors between case sons (n=31) and control sons (n=216)
General effects

• Significantly more of the case daughters compared to case sons sometimes/often used analgesics. Since this differences also was observed in the control group of teenagers, we considered this result as a general sex effect.

• Teenage daughters reported no significant differences in the use of analgesics compared to teenage control daughters.
Strengths and limitations

- Free of selection bias
- Young-HUNT is a cohort study with a very high response rate
- We don’t know which problems existed before the cancer diagnosis
- Quality of parent-adolescent relationship
- Communication
- General family functioning
- Small sample
Conclusion – fathers with cancer

- A significant minority of teenage daughters show poorer adaptation compared to teenage sons
- Teenage daughters show poorer adaptation compared to teenage daughters with cancer-free fathers

- The main findings of our study confirm the results of previous studies namely that teenage daughters are at risk of developing psychosocial problems

- Health professionals should be attentive to such problems for early identification and eventual intervention