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Full Reference: **Rahman, M. M.,** Byles, J., Steinberg, J., David, M., Yu, X., Cust, A., Canfell, K. (2023) *Trajectory of health-related quality of life among women cancer survivors in Australia*
Conference/Meeting Name: COSA Cancer Survivorship Conference
Location: Adelaide, SA, Australia
Dates: 9-10 March, 2023
Presentation Type: Poster

In front of my post with Prof Michael Jefford- Director of the Australian Cancer Survivorship Research, whom I have been following on Twitter for three years

It was a great experience to participate in the 6th COSA Cancer Survivorship 2023 which was held on 9-10 March at the Adelaide Convention Centre. The conference theme for this year is '**Solidarity in Survivorship: bringing us together'**. Over 250 delegates attended the conferences. There were 17 invited speakers, from a broad range of expertise, including survivorship researchers, clinical oncologists, psycho-oncologist, Cancer Survivors and advocates, patient advocates, photographers and newsreaders. Prof Larissa Nekhlyudov was one of the internationally invited speakers from Harvard Medical School.

The theme of solidarity in survivorship was a key message that overlapped across all plenary sessions. However, 'Cancer changes my life' by Monique Bareham, a survivor and patient advocate, shared her story and outstanding advocacy activities, which was the most touching and inspirational talk for me. A arrange of other fascinating talks include Sleep in cancer survivors, delivering what matters, overcoming unconscious bias, building partnerships in global survivorship care, and finally, a fun debate on 'more data=more health'.

As a COSA Cancer Survivorship Fellow, attending 1st time in this conference was a great opportunity to meet with other fellows and survivorship research communities in Australia and outside. Having a breakfast meeting with previous and current survivorship fellows was one of the most useful events for networking, sharing our fellowship and other research activities, and learning from the experience of previous fellows. More importantly, I met in person first time with my survivorship fellowship mentors (Prof Gail Garvey and Assoc Prof Nicolas Hart) whom I have been working with over the last six months. Additionally, I met first time in person with several senior clinicians and survivorship researchers (namely, Prof Bogda Koczwara, Prof Michael Jefford and Prof Larissa Nekhlyudov) whom I have been following on Twitter for several years.

I received several feedback and suggestions on my study, which I will incorporate in further analysis. I was fortunate to develop a new collaboration with Assoc Prof Claudia Rutherford, who has strong expertise in quality of life and patient-reported outcome measures. As part of this collaboration, we will be looking at the long-term health-related quality of outcomes among Australian women cancer survivors.

Trajectories of Health-related Quality of Life among Australian Women Cancer Survivors: Longitudinal Analysis of Patient-reported Outcome

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Take home message: Four trajectories of HRQOL were identified, with differential life experiences in various areas of health over time. Over one-third experienced low or moderate HRQOL trajectories, with many likely to have other health conditions, difficulties in managing available income, and poor behavioural health. Targeted health intervention and income support are paramount for improving their trajectories.

BACKGROUND

Cancer survivors are a large and growing population worldwide. While some survivors can live a healthy and productive life, many experiences poorer long-term health outcomes stemming from cancer diagnosis and/or treatment cancer.[1, 2] With increasing cancer survival, it is crucial to identify the long-term trajectories of survivors' health-related quality of life (HRQOL) based on longitudinal patient-reported outcomes. However, most studies have focussed on the treatment period or the first few years after diagnosis and are based on cross-sectional designs.[3] There is a lack of evidence on the trajectories of HRQOL for long survivors and how their characteristics are associated with experiencing a particular trajectory over time.

OBJECTIVE

1. To identify distinct groups of survivors based on the trajectories of HRQOL across different domains over time.
2. To examine the characteristics of survivors included in the different HRQOL trajectory groups and
3. To identify the predictors for the membership of different HRQOL trajectory groups.

METHODS

Data source and sample

1946-51 birth cohort of the Australian Longitudinal Study on Women Health (ALSWH) and linked Australian Cancer Database (ACD).

In total, 1479 women cancer survivors (diagnosed between Jan 1993 and Dec 2016) who survived at least three years and completed at least one ALSWH survey after diagnosis.

Measures

Baseline measures were taken from the survey completed after diagnosis of cancer, and surveys completed thereafter were considered follow-ups. Long survivors were likely to have more follow-up data.

Derivation of the sample

ALSWH Birth cohort: 1946-51
n=13715 in 1996 (age: 45-50)
9th follow-up until 2019 (age: 68-73)

n= 2224 incident cancer cases between Jan 1993 to Dec 2016

n= 1828, excluding 396 who died within 3 yrs of diagnosis

n=1479, excluding 349 who did not participate in any survey after diagnosis or missing information

Follow-ups for the survivors' cohort

n=1479 Baseline, 0-3 years since diagnosis → n=1205 1st follow-up 4-6 years since diagnosis → n=909 3rd follow-up 7-9 years since diagnosis → … → n=119 8th follow-up 22-24 years since diagnosis → n=69 9th follow-up 25-27 years since diagnosis

Participants' characteristics

Demographic: Age at diagnosis of cancer, area of residence, marital status, educational qualification, and difficulties in managing available income.
Behavioural and health: Smoking, exercise and body mass index (BMI), types of cancer and the number of other major health conditions.

Outcome/indicator variables

Six sub-scales of the Medical Outcomes Study 36-item Short Form Health Survey (SF-36) HRQOL including physical functioning (PF), social functioning (SF), mental health (MH), bodily pain (BP), general health (GH), and vitality (VT) were considered as outcomes/indicator variables. Sub-scale scores were calculated from the sum of the subscales items and transformed to 0-100, with higher scores indicating better health.

Statistical analysis

Group-based multi-trajectory modelling with censored normal distribution for the six subscales of the SF-36 HRQOL was performed to identify the distinct trajectory groups.[4] Multi-variable multinomial logistic regression was performed to estimate the relative risk ratio (RRR) and 95% confidence interval for the membership of a trajectory group compared to a reference group, according to participants' characteristics.

RESULTS

Of the 1479 women cancer survivors, 659 (45%) were diagnosed with breast cancer, 233 (16%) with melanoma, 134 (9%) with cervix/uterus/ovary, 78 (5%) with colon, 37 (3%) lung and 338 (23%) other cancers. Survivors were more likely to be married or in a de facto relationship (72%), non-metropolitan (61%), never smoked (59%), and find managing money either easy or not too bad (54%). However, the majority had. Over two-thirds had at least one other health condition (68%).

Four trajectory groups were identified (Figure 1)

Group 1 - Low HRQOL: Included 156 (11%) survivors with low HRQOL across all domains- likely to be obese (50%), have difficulties managing available income (69%), had other health conditions (87%) and likely to die early.

Group 2 - Moderate HRQOL: Included 24% of survivors with moderate PF, SF, MH & GH scores but low scores in BP and VT- likely to be obese (38%), have difficulties managing available income (58%), and had other health conditions (76%).

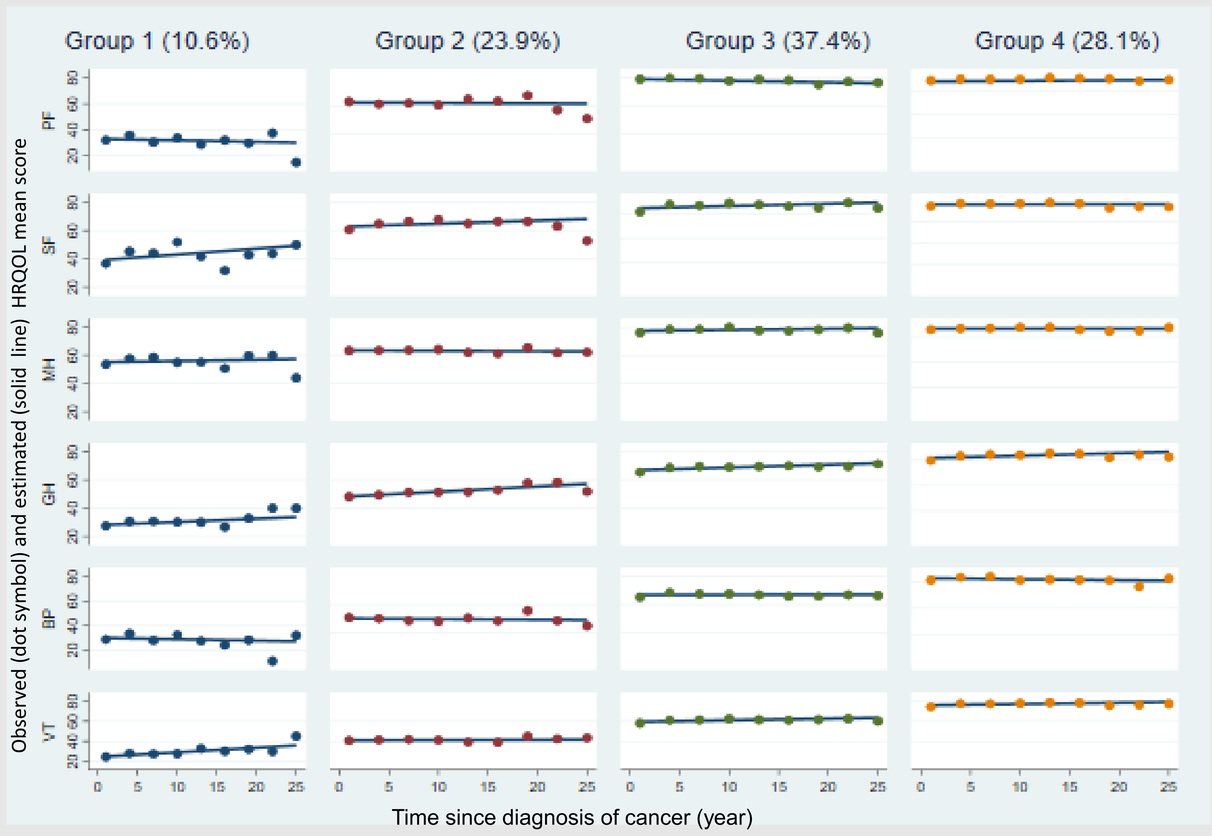
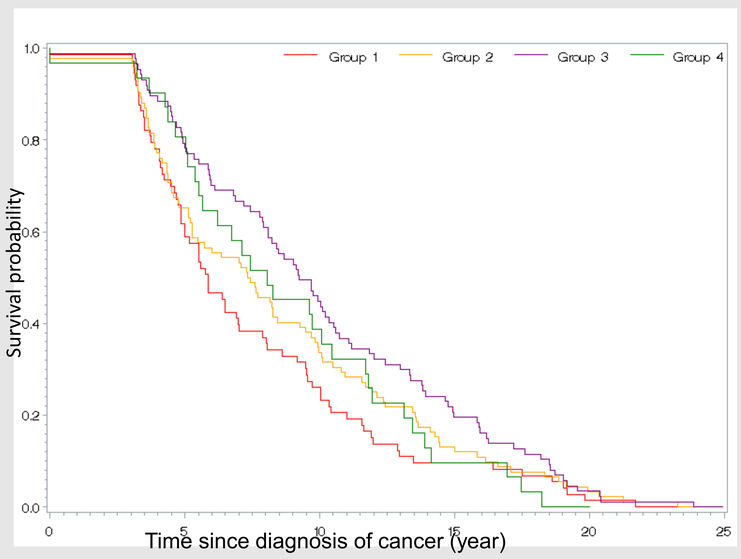


Figure 1: Trajectory groups by mean HRQOL subscales, including physical functioning (PF), social functioning (SF), mental health (MH), general health (GH), bodily pain (BP), and vitality (VT), n=1479

Group 3 - High HRQOL: The largest group of survivors (37%) with high health across all domains except for moderate VT – 77% were married/ De facto, 55% did moderate or high exercise, and 34% had no other health conditions, and likely survive longer.

Group 4 - Very high HRQOL: Included over a quarter of survivors with very high scores in all domains- 42% higher educated, 70% easy or not too bad at managing available income, 72% with moderate or high exercise, and 44% with no other health conditions.



Group membership

Survivors who had no formal education (RRR: 2.7, 95%CI: 1.4-5.4), difficult or impossible-to-manage available income (RRR: 4.4, 95%CI:2.7-7.0), obese (RRR:4.9, 95% CI: 2.8-8.5), past smoker (RRR: 3.2, 95%CI: 1.6-6.2), and 1-2 other conditions (RRR:3.1, 95% CI: 1.6-6.2) or >2 other conditions (RRR: 13.5, 95%CI: 6.7-27.4) had increased relative risk of being in Group 1 (low HRQOL) than Group 4.

CONCLUSION

Four distinct trajectory groups were identified, with quite differential HRQOL experiences. Over one-third experienced low or moderate HRQOL trajectory and were most likely to have other health conditions, difficulties managing available income, and obesity. Our findings have implications for targeted interventions to adopt a healthy lifestyle and manage other health conditions. Further study can focus on how cancer-specific treatment, fear of cancer, and financial toxicity influence survivors' trajectories of HRQOL.

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Acknowledgments: The research on which this poster is based was conducted as part of the Australian Longitudinal Study on Women's Health by the University of Queensland and the University of Newcastle. We are grateful to the Australian Government Department of Health for funding and to the women who provided the survey data. We acknowledge the conference support funding from the Sydney Cancer partners and Cancer Institute NSW, and registration support from the COSA Survivorship Fellowship.

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Proudly supported by Cancer Institute NSW

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