



Identifying return-to-work trajectories among breast cancer survivors using sequence analysis [P-281]

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1 Introduction & Objectives

Context

- The return-to-work (RTW) process after breast cancer (BC) can be complex.
- Simple static measures used to assess RTW may ignore this dynamic multi-stage process that is yet important for targeting interventions aimed at reducing poor RTW outcomes.

Objectives

- (1) Identify RTW trajectories after BC using the sequence analysis method
- (2) Describe their underpinning personal, medical, psychological and occupational factors

2 Study population

- The ELCCA II prospective cohort included 128 BC patients in 2015-2016.
- BC patients were followed at 1 month, 6 months and annually after 1 year following their BC diagnosis
- Medical and sociodemographic characteristics, and quality of life (QoL) were assessed at inclusion and at the follow-up.
- A retrospective occupational calendar with a 6-month time scale from diagnosis up to 3 years later was completed by BC patients at their 4 year follow-up (Figure 1)
- BC Patients notified one of the 7 following five occupational situations: "full-time", "part-time", "sick leave", "unemployment", "training courses", "(pre)retirement", "other inactivities"

	Diagnostic (t)	6 months	1 y	1.5 y	2 y	2.5 y	3 y	2.5 y	3 y
Year									
Employment period									
Full-time									
Part-time									
Interruption period									
Sick leave									
Training									
Unemployment									
Retirement									
Other type of inactivities									

Figure 1: Occupational calendar after diagnostic completed by BC patients at their 4 year follow-up

- Inclusion criterias** : - Occupational calendar completed (76/128 BC patients)
- BC patients active at the time of their diagnosis
- Exclusion criteria** : - BC patients retired or unemployment at the time of diagnostic

3 Sequence analysis

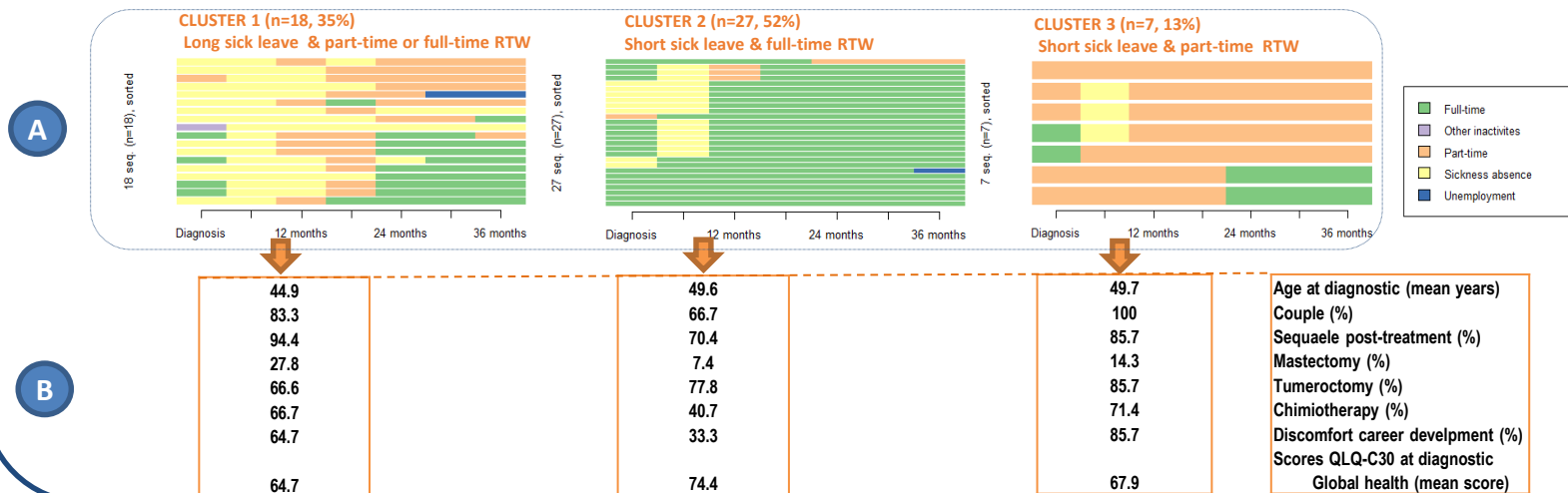
- Sequence analysis is a quantitative biographical approach
- It generate a sequence for every BC patients based on their individual occupational situations every 6 months from their diagnosis up to 3 years after their diagnosis (Figure 2).
- Similarity between BC patients' occupational trajectories were estimated using the optimal matching (OM) distance algorithm¹.
- An agglomerative hierarchical clustering with the Ward's linkage method was used to identify patterns of occupational trajectories after BC patients diagnostic (i.e. clusters) based on the distance matrix previously elaborated.
- 5 occupational situations were kept in state sequence analysis (Figure 2)

Patient ID	Diagnostic	6_M	12_M	18_M	24_M	30_M	36_M
01-006	Full time	Sick leave	Part-time	Part-time	Full time	Unemployment	Other inactivities
01-020	Sick leave	Full time	Full time	Full time	Full time	Full time	Full time
01-021	Sick leave	Sick leave	Sick leave	Part-time	Part-time	Part-time	Full-time

Figure 2: Example of five BC patients sequences representing their occupational situation from their diagnostic up to 3 years later

¹Gabadinho, A., Ritschard, G., & Studer, M. (2011). Analyzing and Visualizing State Sequences in R with TraMineR. Journal Of Statistical Software, 40(4).

- 52 BC patients were active at the time of their diagnostic that completed their occupational calendar were included.
- 3 RTW trajectories' patterns were identified among BC patients by sequence analysis (Figure 3-A).
- Socio-demographic, medical and QoL (QLQ-C30) varied according to RTW trajectories (Figure 3-B).



5 Discussion & Conclusion

- The application of sequence analysis highlighted the heterogeneity of the RTW process among BCS.
- It captures trajectories of multiple states and transitions provided a holistic, longitudinal and diachronic approach of RTW.
- Three different patterns of RTW trajectories after breast cancer were identified and underlined a number of key insights not found using conventional static methods.
- However, these results have to be confirmed by using a larger sample of BCS

4 Results

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