



# Thoughts and Anticipations about Cancer: Psychometric Properties of a Questionnaire and Relationships with Psychological Symptoms



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## Background

- Western society encourages positive thinking as an effective way to cope with cancer.
- The literature supporting the efficacy of cognitive-behavioral therapy indirectly suggests that realistic thinking would be an effective cognitive strategy.
- No tool has yet been validated to compare the effects of different thinking orientations on the psychological adjustment to cancer.
  - In this study, we used the scoring method developed by Churchill and Davis (2010) to categorize women into one of four thought orientations:

Negative tho		
Below median	Above median	Positive thoughts
Not Future-oriented かべかべ	Negative	Below median
Positive	Realistic	Above median

# **Objectives**

- To assess the psychometric properties of the Thoughts and Anticipations about Cancer questionnaire (TAC; Gilbert et al., 2018).
- To evaluate the cross-sectional and prospective associations between the different thinking orientations and psychological symptoms before and after cancer treatment.

### **Hypotheses:**





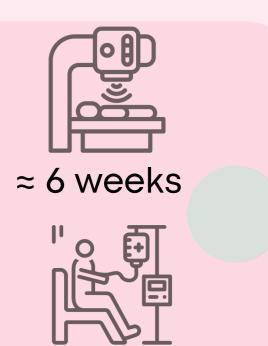
(At TO and T1)

(At TO and T1)

## Methods

- Secondary analysis of three studies.
- All participants (N = 242) were females and treated for nonmetastatic breast cancer.

-TAC -Assessment of psychological symptoms (Depression, anxiety, fear of cancer recurrence [FCR], insomnia, fatigue, and pain)



 $\approx$  18-24 weeks

-Assessment of psychological symptoms

(Depression, anxiety, FCR, insomnia, fatigue, and pain)

### Results

Figure 1. Results of the psychometric analyses

#### **Item Reduction and Exploratory Factor Analysis**

#### Four factors for the negative subscale

- Impact on functioning and others "I will have a recurrence"; - Impact on physical appearance and life projects "My life will never get back to normal";
- Anticipations about treatment outcome "I will not get through this";
- Other worries "I will have to face this difficult time alone".

#### Three factors for the positive subscale

- Healing and keeping a good outlook "I will heal";
- Impact on others "The cancer will bring me closer to my family and/or friends";
- Denial of the possible impact of cancer and its treatment "I will have very few side effects"

#### Validity

### **Convergent validity**

TAC negative subscale - Pessimism TAC positive subscale - Optimism LOT-R: r=0.39, p <0.05; SOP2: r=0.38, p <0.05 LOT-R: r=0.41, p <0.05; SOP2: r=0.48, p <0.05

#### **Divergent validity**

TAC positive subscale - Pessimism TAC negative subscale - Optimism LOT-R: r=-0.20, p< 0.05; SOP2: r=-0.33, p<0.05 LOT-R: r=-0.46, p< 0.05; SOP2: r=-0.46, p<0.05

#### Reliability

Positive subscale: a=0.93; item-total correlations ranging from 0.39 to 0.81

Negative subscale: a=0.90; item-total correlations ranging from 0.32 to 0.72

Note. LOT-R: The Life-Orientation Test-Revised; SPO2: The Optimism-Pessimism-2 Scale

TAC

37 items

Table 1. Means for Thought Orientations by Symptom Levels Before (T0) and After (T1) Receiving Chemotherapy or Radiation Therapy

	Positive (n=60)		Negative (n=67)		Realistic (n=53)		Not future-oriented (n=44)	
Symptoms	toms <sub>M</sub>		М		М		M	
	ТО	T1	ТО	T1	ТО	T1	ТО	T1
	0.25 b,c	0.27 b,c,d	0.33	0.35	0.35	0.37	0.29 b,c	0.32 <sup>c</sup>
Depression								
Anxiety	0.36 b,c,d	0.24 b,c,d	0.53	0.52	0.54	0.45	0.56	0.57 <sup>c</sup>
FCR	0.24 b,c	0.27 <sup>c</sup>	0.36 <sup>c</sup>	0.34 <sup>c</sup>	0.46	0.46	0.24 b,c	0.23 b,c
Insomnia	0.25 b,c	0.28 b,c	0.33 <sup>c</sup>	0.37	0.41	0.37	0.23 b,c	0.25 b,c
Fatigue	0.22 b,c	0.28 b,c	0.31	0.38	0.35	0.42	0.23 b,c	0.27 b,c
Pain	0.14 b,c	0.20	0.22	0.24	0.20	0.22	0.14 b	0.22

#### Note.

- b= significant difference with negative thought orientation at same point in time
- c= significant difference with realistic thought orientation at same point in time
- d= significant difference with not future-oriented at same point in time

### Conclusions

the psychometric analyses confirmed the reliability and validity of the 37-item version of the TAC.



Confirmed hypothesis: Patients with a negative thought orientation consistently had higher levels of psychological and psychophysiological symptoms when compared to those with a positive orientation at both time points.

**TO**: ↑ Depression, anxiety, FCR, insomnia, fatigue and pain (> positive)

T1: ↑ Depression, anxiety, insomnia and fatigue (> positive)

↓ FCR (< realistic)</pre>



Infirmed hypothesis: Patients with a realistic thought orientation reported greater symptoms than those with a positive orientation at both time points.

TO: ↑ Depression, anxiety, FCR, insomnia, fatigue and pain (> positive)

T1: ↑ Depression, anxiety, FCR, insomnia and fatigue (> positive)



No a priori hypothesis: Results revealed that not futureoriented women had less severe psychological and psychophysiological symptoms than those with a negative or realistic orientation at both time points.

- TO: ↓ Depression, FCR, insomnia, fatigue and pain (< realistic and negative)
- T1: ↓ Depression, anxiety, FCR, insomnia and fatigue (< realistic)
  - ↓ FCR, insomnia and fatigue (< negative)</p>
  - ↑ Depression and anxiety (> positive)

It remains to be clarified whether the same differences would be observed with a longer follow-up and when considering the occurrence of unexpected events during the cancer care trajectory.