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EXTENDED ABSTRACT

A28 Preliminary validation study of the Portuguese version of the Functional Assessment of Cancer Therapy – Cognitive Function - Version 3 (FACT-Cog-v3)

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Introduction

Cognitive impairment is one of the most frequent side effects reported by breast cancer survivors (BCS) [1]. Perceived cognitive functioning (PCF) is an important outcome in research and clinical practice with this population [1-3].

The Functional Assessment of Cancer Therapy – Cognitive Function - Version 3 (FACT-Cog-v3) [4] is one measure of a series of questionnaires dedicated to assessing chronic illnesses and conditions under the umbrella of Functional Assessment of Chronic Illness Therapy (FACIT). FACT-Cog-v3 is one of the most well-known and widely used self-report instruments specifically developed to evaluate cognitive complaints in cancer patients. No validity study of the Portuguese translation of this instrument is known, despite its clinical relevance.

In this work, the preliminary study of the psychometric characteristics of the FACT-Cog-v3 in a sample of Portuguese BCS is described, namely reliability and validity.

Methods

This preliminary validation study was performed on a convenience sample of 73 female BCS, aged 29 to 64 years old. Participants answered online self-reported questionnaires, including socio-demographic and clinical questions, the FACT-Cog-v3, the Cognitive Functioning subscale of the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire – Version 3 (EORTC QLQ-C30 or simply QLQ-C30) [5,6] and the Depression subscale of the Hospital Anxiety and Depression Scale (HADS) [7,8].

This study used the licensed FACIT's Portuguese translation of the FACT-Cog-v3. The original FACT-Cog-v3 is a 37-item measure consisting of four dimensions: Perceived Cognitive Impairments (CogPCI); Comments from Others (CogOth), Perceived Cognitive Abilities (CogPCA) and Impact on Quality of Life (CogQoL). Higher scores indicate better PCF. Reliability and validity of these scores have been widely established [e.g., 9,10].

The 2 item-Cognitive Functioning subscale of the QLQ-C30, that assesses cognitive functioning, was used. Higher scores represent better PCF [6].

HADS Depression subscale, consisting of 7 items, was used to evaluate depressive symptomatology. The higher the scores, the greater the presence of depressive symptoms [8].

All statistical analyses were performed using the software IBM SPSS Statistics version 21.0. Descriptive statistics were calculated to describe the sample and the FACT-Cog-v3 subscales scores. Reliability, through internal consistency analysis, was examined with Cronbach's alpha; a coefficient of .70 was considered adequate and >.80 indicated high internal consistency. Item-total correlations, examined to identify any problematic items, between .30 and .80 were considered acceptable. Concurrent and convergent validity were assessed by the strength of the Pearson's correlation coefficient between FACT-Cog-v3 subscales and, respectively, the QLQ-C30 Cognitive Functioning subscale and HADS Depression subscale. A correlation coefficient ≥.70 indicated a strong correlation, between .40 and .70 a moderate correlation, and between 0 and .40 a weak correlation. All significance tests were conducted using a significance level of p=.05.

Keywords:
Validation study; Preliminary results; Functional Assessment of Cancer Therapy - Cognitive Function – Version 3; FACT-Cog-v3; Perceived cognitive functioning; Cognition; Breast neoplasms; Cancer survivors.

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Table 1 - Sociodemographic and clinical characteristics of the sample

	Breast Cancer Survivors (*n* = 73)	
	n	%
Age (Years) (*M*±*SD*)	45.51±8.59	
29-36	12	16.4
37-43	21	28.8
44-51	21	28.8
52-64	19	26.0
Marital Status		
Single	19	26.0
Married	37	50.7
Cohabiting unmarried partners	10	13.7
Divorced or separated	7	9.6
Widowed	0	0.0
Education		
1st Cycle (4th year complete)	1	1.4
2nd Cycle (6th year complete)	4	5.5
3rd Cycle (9th year complete)	6	8.2
Secondary Education (12th year complete)	20	27.4
Higher Education – Bachelor's degree	36	49.3
Higher Education – Master's degree	5	6.8
Higher Education – Doctoral degree	1	1.4
Occupation		
Working (part and full time)	39	53.4
Medical leave	21	28.8
Unemployed	7	9.6
Retired	6	8.2
Year of Cancer Diagnosis		
≤ 2000	1	1.4
2001-2005	2	2.7
2006-2010	6	8.3
2011-2017	64	87.6
Previous Treatments		
None	0	0.0
Surgery	67	91.8
Radiation therapy	51	69.9
Chemotherapy	73	100.0
Hormone therapy	47	64.4
Immunotherapy	5	6.8
Other	8	11.0
Forthcoming Treatments		
None	23	31.5
Surgery	5	6.8
Radiation therapy	7	9.6
Chemotherapy	0	0.0
Hormone therapy	42	57.5
Immunotherapy	0	0.0
Other	4	5.5
End of Treatments (Year)		
≤ 2000	0	0.0
2001-2005	2	2.8
2006-2010	4	5.6
2011-2017	49	66.9
Not finished yet	18	24.7
Cognitive functioning (Cognitive Functioning subscale of the QLQ-C30) *(M±SD)*	58.45±29.41	
Depression (HADS) *(M±SD)*	6.23±4.03	

QLQ-C30 = European Organization for Research and Treatment of Cancer Quality of Life Questionnaire – Version 3 (EORTC or simply QLQ-C30); HADS = Hospital Anxiety and Depression Scale.

Table 2 - FACT-Cog-v3 subscales means and standard deviations, item-total correlations and Cronbach's alphas.

FACT-Cog-v3	Breast Cancer Survivors (*n* = 73)			
	M±*SD*	Item-total correlation	Cronbach's alpha if an item was deleted	Cronbach's alpha
Perceived Cognitive Impairments (CogPCI)	41.63±17.68			**.96**
CogA1 - I have had trouble forming thoughts	2.66±1.32	.70	.96	
CogA3 - My thinking has been slow	2.36±1.37	.71	.96	
CogC7 - I have had trouble concentrating	1.93±1.28	.74	.95	
CogM9 - I have had trouble finding my way to a familiar place	3.42±1.00	.48	.96	
CogM10 - I have had trouble remembering where I put things, like my keys or my wallet	2.26±1.38	.63	.96	
CogM12 - I have had trouble remembering new information, like phone numbers or simple instructions	1.95±1.33	.74	.95	
CogV13 - I have had trouble recalling the name of an object while talking to someone	1.96±1.34	.72	.96	
CogV15 - I have had trouble finding the right word(s) to express myself	2.01±1.32	.78	.95	
CogV16 - I have used the wrong word when I referred to an object	2.86±1.36	.57	.96	
CogV17b - I have had trouble saying what I mean in conversations with others	2.58±1.31	.72	.96	
CogF19 - I have walked into a room and forgotten what I meant to get or do there	2.08±1.14	.72	.96	
CogF23 - I have had to work really hard to pay attention or I would make a mistake	2.23±1.30	.78	.95	
CogF24 - I have forgotten names of people soon after being introduced	2.62±1.21	.68	.96	
CogF25 - My reactions in everyday situations have been slow	2.49±1.25	.84	.95	
CogC31 - I have had to work harder than usual to keep track of what I was doing	2.00±2.36	.84	.95	
CogC32 - My thinking has been slower than usual	2.03±1.31	.83	.95	
CogC33a - I have had to work harder than usual to express myself clearly	2.29±1.32	.83	.95	
CogC33c - I have had to use written lists more often than usual so I would not forget things	1.90±1.34	.75	.95	
Impact on QoL (CogQoL)	7.89±5.27			**.94**
CogQ35 - I have been upset about these problems	1.86±1.34	.74	.95	
CogQ37 - These problems have interfered with my ability to work	2.00±1.45	.86	.91	
CogQ38 - These problems have interfered with my ability to do things I enjoy	2.12±1.42	.88	.91	
CogQ41 - These problems have interfered with the quality of my life	1.90±1.52	.92	.90	
Comments from Others (CogOth)	13.79±3.21			**.88**
CogO1 - Other people have told me I seemed to have trouble remembering information	3.14±1.11	.55	.93	
CogO2 - Other people have told me I seemed to have trouble speaking clearly	3.55±0.90	.84	.80	
CogO3 - Other people have told me I seemed to have trouble thinking clearly	3.51±0.90	.84	.80	
CogO4 - Other people have told me I seemed confused	3.60±0.83	.78	.83	
Perceived Cognitive Abilities (CogPCA)	11.30±6.07			**.91**
CogPC1 - I have been able to concentrate	1.84±1.04	.73	.90	
CogPV1 - I have been able to bring to mind words that I wanted to use while talking to someone	2.03±1.00	.65	.91	
CogPM1 - I have been able to remember things, like where I left my keys or wallet	1.77±1.03	.77	.90	
CogPM2 - I have been able to remember to do things, like take medicine or buy something I needed	2.15±1.10	.67	.91	
CogPF1 - I am able to pay attention and keep track of what I am doing without extra effort	1.62±1.13	.80	.89	
CogPCH1 - My mind is as sharp as it has always been	0.97±1.11	.76	.90	
CogPCH2 - My memory is as good as it has always been	0.93±1.11	.77	.90	

FACT-Cog-v3 = Functional Assessment of Cancer Therapy – Cognitive Function - Version 3. *Note:* Two items of the CogPCI subscale and two items of the CogPCA subscale are not currently scored under the FACT-Cog-v3 scoring algorithm. Therefore, 33 items were used to test reliability in this study.

Table 3 - FACT-Cog-v3 correlations with cognitive functioning and depression scores.

FACT-Cog-v3		Breast Cancer Survivors (n = 73)	
		Cognitive functioning (Cognitive Functioning subscale of the QLQ-C30)	Depression (HADS)
Perceived Cognitive Impairments (CogPCI)	*r*	.69	-.59
	p	<.001	<.001
Impact on QoL (CogQoL)	*r*	.69	-.64
	p	<.001	<.001
Comments from Others (CogOth)	*r*	.45	-.38
	p	<.001	.001
Perceived Cognitive Abilities (CogPCA)	*r*	.60	-.66
	p	<.001	<.001

FACT-Cog-v3 = Functional Assessment of Cancer Therapy – Cognitive Function - Version 3; QLQ-C30 = European Organization for Research and Treatment of Cancer Quality of Life Questionnaire – Version 3 (EORTC or simply QLQ-C30); HADS = Hospital Anxiety and Depression Scale. *Note:* Two items of the CogPCI subscale and two items of the CogPCA subscale are not currently scored under the FACT-Cog-v3 scoring algorithm. Therefore, 33 items were used to test validity in this study.

Results

The characteristics of the BCS' sample are summarized in Table 1. FACT-Cog-v3 subscales means, standard deviations, item-total correlations and Cronbach's alphas are presented in Table 2. The Cronbach's alpha coefficient of the Portuguese FACT-Cog-v3 subscales ranged from .88 to .96, suggesting high internal consistency. None of the items would substantially affect reliability if they were deleted. All item-total correlations for each subscale were greater than .48, and the vast majority were equal or greater than .70. Moderate and strong significant correlations were found between the QLQ-C30 Cognitive Functioning subscale and all FACT-Cog-v3 subscales, indicating good concurrent validity. Correlations between FACT-Cog-v3 subscales scores and HADS Depression subscale were moderate to weak, indicating satisfactory convergent validity (Table 3).

Discussion

The results revealed that the Portuguese version of the FACT-Cog-v3 has good psychometric properties regarding reliability and validity, like the original and other versions. Therefore, the FACT-Cog-v3 can be a useful and valid scale to assess PCF in the Portuguese cancer population. Additional studies are being developed by our team to further study the psychometric properties of this instrument, with a larger sample and including diversified cancer survivors, to corroborate and extend these results and conclusions.

Ethics committee and informed consent:

The current research was approved by an independent ethics committee and participants gave their informed consent before they were enrolled in the study.

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