A 12-months longitudinal study of cancer-related distress trajectories in Chinese cancer survivors

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Cancer diagnosis and its treatments can be stressful and potentially traumatic.(1, 2) This can lead to significant cancer-related distress with symptoms including intrusive thoughts, emotional numbness and avoidance of reminders related to cancer, and hypervigilance and physiological arousal.(1, 2) Prevalence estimates of cancer-related distress range between 7% and 34% of cancer survivors, with up to 14% met the diagnostic criteria of post-traumatic stress disorder (PTSD).(3) Such broad prevalence estimates together with the mixed findings of cancer-related distress patterns in longitudinal studies (4) may reflect individual response differences or methodological effects. However, among existing studies, none has unfolded the heterogeneity in trajectories of adjustment to cancer-related distress and so were limited in their ability to longitudinally identify risk factors for cancer-related distress and patterns of change.

OBJECTIVES

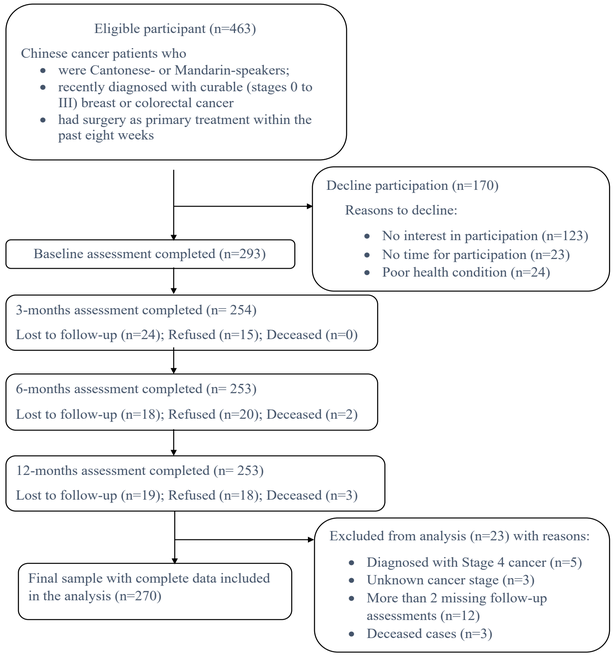
This secondary longitudinal analysis aims to:

1. Explore the heterogeneity of cancer-related distress (assessed by IES-R) through mapping distinct trajectory patterns over 12-months among Chinese patients with breast or colorectal cancer.
2. Identify the associated risk factors that differentiate the trajectory membership of cancer-related distress, including demo and clinical data, baseline attentional bias (dot-probe task), metacognition (MCQ-30), fear of cancer recurrence (FCRI), psychological distress (HADS), neuroticism (EPQ) and physical symptom distress (MSAS).

*Reaction time were recorded in the dot-probe tasks. A positive bias score represents a tendency to attend towards target stimuli (vigilance); whereas a negative bias score represents a tendency to direct attention away from target stimuli (avoidance).

METHODS

Figure 1. Sampling structure and attrition pattern of the study.



Data analysis

Step 1: Latent growth mixture modelling to map distinct trajectory patterns of cancer-related distress.
Step 2: Univariate logistic analysis to identify potential covariates of the trajectory patterns.
Step 3: Fully-adjusted multinomial logistic regression to identify the associated risk factors determining the trajectory patterns.

RESULTS

Table 1. Summary of demographic and clinical characteristics.

	Participants N=270 (%)
Gender	
Male	67 (24.8%)
Female	203 (75.2%)
Age at diagnosis (year) mean ± standard deviation (SD)	59.9 ± 10.2
Time since cancer diagnosis (months) ± standard deviation (SD)	2.1± 2.7
Marital status	
Married	191 (70.7%)
Single/ divorced/ separated/ widowed	79 (29.3 %)
Educational level	
No formal/ primary education	84 (31.1%)
Secondary/ tertiary	186 (68.9%)
Occupation status	
Employed (full-time/part-time)	101 (37.4%)
Retired	84 (31.1%)
Housewife	50 (18.5%)
Unemployed	35 (13.0%)
Cancer type	
Breast cancer (BC)	163 (60.4%)
Colorectal cancer (CRC)	107 (39.6%)
Stage	
Stage 0	53 (19.6%)
Stage I	84 (31.1%)
Stage II	86 (31.9%)
Stage III	47 (17.4%)

Figure 2. 12-months trajectory patterns of cancer-related distress

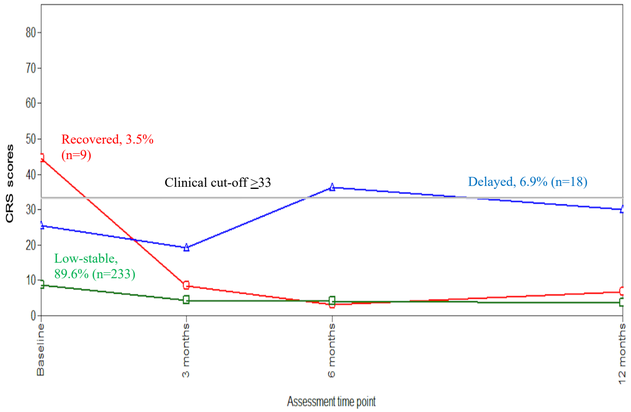


Table 2. Multinomial logistic regression of predictors of cancer-related distress trajectories (low-stable group as referent)

	Delayed group			Recovery group		
Variable	OR	95% CI	p-value	OR	95% CI	p-value
Radiotherapy	3.24	1.04, 10.05	0.042*	26.39	1.99, 349.14	0.013*
Physical symptom distress	4.97	1.54, 16.01	0.007*	22.82	3.09, 168.64	0.002*
HADS Anxiety	1.20	1.04, 1.38	0.012*	1.47	1.17, 1.85	<0.001**
Attentional bias indices mean ± SD						
Negatively-valenced words Stimulus/Prime/Duration						
-/neutral/500 ms	1.01	0.99, 1.01	ns	1.02	1.01, 1.03	<0.001**
+/prime/1250 ms	0.99	0.97, 0.99	0.010*	1.01	0.99, 1.03	ns
Cancer-related information Stimulus/Duration						
-/1250 ms	1.00	0.99, 1.01	ns	1.03	1.01, 1.04	0.003*
Model Statistics						
χ^2						78.38
Cox and Snell						0.26
p-value						<0.001**

*p<0.05; **p<0.001; NS= non-significant.

CONCLUSIONS

- Most cancer patients seemed resilient to cancer-related distress, but 1 in 14 experienced a delayed increase to a clinical level after 6 months.
- Physical symptoms distress, perhaps as a result of radiotherapy, and anxiety may serve as indicators of emotional vulnerability in early cancer rehabilitation.
- Patients in the delayed group may hold more elaborate cancer-specific schemas that can be accessed and activated easily, resulting in maladaptive attentional avoidance.

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