Symptoms of posttraumatic stress, psychological adjustment and post-traumatic growth and among cancer patients and survivors: The indirect effect of psychological flexibility

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INTRODUCTION

Cancer is often considered a traumatic event that may encompass the experience of symptoms of posttraumatic stress, which may compromise patient's well-being over the course of illness and beyond, as well as their emotion regulation. Because psychological flexibility has been considered an important mechanism in psychological functioning, in this exploratory study **we examined if the association between symptoms of posttraumatic stress, psychological adjustment and posttraumatic growth (PTG) and among cancer patients and survivors was mediated through that process, and whether this mediation was moderated by disease stage (cancer vs. survivorship).**

METHODS

Participants

The sample of this cross-sectional study consisted of 73 participants, one group of cancer patients in treatment (n = 39) and one group of cancer survivors (n = 34). The total sample comprised mostly **females** (78.1%) and had a **mean age of 60.10 years** (SD = 10.07; range: 39-84). Most participants had **primary education** (67.6%) and were **married/lived as married** (66.7%). **Breast cancer** was the most common type of cancer among the group of patients (n = 15, 57.7%) and survivors (n = 11, 55%). Among the remaining participants, the types of cancer included genito-urinary, head and neck, leukemia and lymphoma, lung, stomach, and colon-rectal cancers.

Measures

Symptoms of posttraumatic stress I *PTSD Checklist Civilian Version* (PCL-C; Weathers, Litz, Huska, & Keane, 1994; Portuguese version [PV]: Marcelino & Gonçalves, 2012)

Psychological flexibility I *Acceptance and Action Questionnaire* (AAQ-II; Bond et al., 2011; PV: Pinto-Gouveia, Gregório, Dinis, & Xavier, 2012)

Anxiety and depression I *Hospital Anxiety and Depression Scale* (HADS; Snaith & Zigmond, 1994; PV: Pais-Ribeiro et al., 2007)

Quality of life I WH*OQOL-Bref* (WHOQOL Group, 1998; PV: Vaz-Serra et al., 2006)

Posttraumatic growth I *Posttraumatic Growth Inventory – Short Form* (PTGI-SF; Cann et al., 2010; PV: Lamela, Figueiredo, Bastos, & Martins, 2014)

Procedure

The sample was recruited between October 2016 and June 2017 through a non-probabilistic method (by convenience) in Liga Portuguesa Contra a Cancro, North section – Porto. This study was authorised by the board of Liga Portuguesa Contra o Cancro, and approved by the Ethics Committee of Research in Psychology of the Faculty of Psychology and Education Sciences of the University of Coimbra. All ethical procedures were strictly followed.

RESULTS

Associations between symptoms of posttraumatic stress, QoL, psychological symptoms and PTG

Regarding the association between the three criteria evaluated by the PCL-C and its total score, the QoL domains and the symptoms of psychological distress, generally, the results indicated significant and negative associations between these variables (see Table 1). The pattern of association was similar for both cancer patients and survivors; the criterion *Re-experience* was not associated with any QoL domain and depression among survivors. In both groups, the correlations between symptoms of posttraumatic stress and PTG were not significant.

Table 1. Correlations between symptoms of traumatic stress, QoL and PTG among cancer patients and survivors

	PHY	PSY	SOC	ENV	QOL	ANX	DEP	PTG
Cancer patients								
Re-experience – B	-.44**	-.54**	-.33	-.53**	-.35*	.66***	.48**	-.24
Avoidance - C	-.70***	-.55**	-.37*	-.52**	-.36*	.70***	.61***	-.03
Hyper-activation - D	-.45**	-.68***	-.46**	-.52**	-.26	.64***	.54**	.03
Total	-.53**	-.57***	-.36*	-.58**	-.41*	.64***	.50**	.03
Survivors								
Re-experience – B	-.27	-.30	-.32	-.25	-.24	.37*	.30	.15
Avoidance - C	-.39*	-.54**	-.41*	-.52**	-.57**	.48**	.56**	-.18
Hyper-activation - D	-.53**	-.55**	-.34	-.61***	-.58**	.42*	.36*	-.07
Total	-.33	-.45**	-.27	-.42*	-.34	.38*	.37*	-.04

PHY: Physical; PSY: Psychological; SOC: Social relationships; ENV: Environment; QOL: General facet on QoL and health: ANX: Anxiety; DEP: Depression; PTG: Posttraumatic growth

* p < .05; ** p < .01; *** p < .001

Associations between psychological flexibility, QoL, psychological symptoms and PTG

Regarding psychological flexibility, overall, in both groups, the results indicated significant and negative correlations between psychological flexibility, the QoL domains and the symptoms of anxiety and depression. The exception was the association between psychological flexibility and the general facet on QoL and health in the group of cancer patients. No significant correlations were found with PTG (Table 2).

Table 2. Correlations between psychological flexibility, QoL and PTG among cancer patients and survivors

	PHY	PSY	SOC	ENV	QOL	ANX	DEP	PTG
Cancer patients								
Psychological flexibility[a]	-.44**	-.63***	-.37*	-.50**	-.20	.57***	.50**	.06
Survivors								
Psychological flexibility[a]	-.47**	-.50**	-.39*	-.61***	-.53**	.56**	.37*	-.21

PHY: Physical; PSY: Psychological; SOC: Social relationships; ENV: Environment; QOL: General facet on QoL and health: ANX: Anxiety; DEP: Depression; PTG: Posttraumatic growth

[a] Higher scores denote lower psychological flexibility

* p < .05; ** p < .01; *** p < .001

Mediation of psychological flexibility

The direct path from symptoms of posttraumatic stress to psychological flexibility was significant, with an unstandardized regression coefficient B = 0.46, p < .001. The tested mediation models (see Figure 1) showed that the indirect effect through psychological flexibility was significant for all associations, with exception of Social and Overall QoL (models not shown) and PTG.

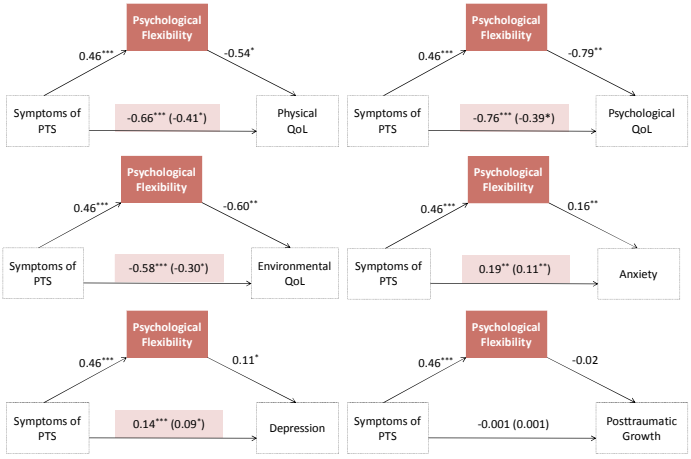

Figure 1. Models depicting the mediating effects of psychological flexibility on the associations between symptoms of posttraumatic stress and quality of life domains, symptoms of anxiety and depression, and PTG

Moderated mediation by disease stage

No moderated mediation of disease stage was found.

CONCLUSIONS

These findings reinforce the usefulness of psychological flexibility as a health promoting variable, considering its association with better psychological adjustment and QoL. These results also highlight the importance of implementing psychological interventions aiming at developing acceptance in cancer patients, regardless of disease stage.

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