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Title:

Assessment of psychosocial dimensions of return to work after a cancer diagnosis: current perspectives and future opportunities.

Running head:

Cancer and return to work: psychosocial dimensions perspectives

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Commentary

Despite an increase in long-term survival, cancer patients may suffer persistent physical and psychological impairments that have a detrimental effect on their quality of life and hinder return to work (RTW).¹ The ability to RTW after a cancer diagnosis resides in the complex interaction between the cancer survivor's characteristics (e.g., medical, psychosocial factors) and motivations, and his environment that includes work-related factors, family environment, healthcare related factors (e.g., physician's advice), and public welfare policies.² Some epidemiological studies have suggested that female patients were less likely to RTW than male patients.² Cancer survivors with low socio-economic status and/or low levels of education were also at a higher risk of non-RTW, which perfectly underlines the vicious circle (i.e., the relation between education, health, and employment) contributing to health inequalities.² Medical factors, such as chemotherapy and invasive cancer, and occupational factors, such as jobs including high psychological or physical demands or those with few professional accommodations, were associated with a higher risk of non-RTW after cancer.² Psychosocial factors, such as low quality of life, low perceived organizational support, high emotional distress, and high cancer-related fatigue, were also associated with higher difficulties of

RTW.¹ However, we aimed to discuss further considerations that should be taken into account in studies assessing psychosocial determinants of cancer survivors' RTW that include: (i) measure prospectively psychological factors within the first year of patients' diagnosis; (ii) study multidimensional aspects of some psychological factors; (iii) explore other psychosocial factors relevant to RTW; (iv) consider temporal variations in psychological factors among cancer patients; and (v) develop a model that includes both direct and indirect relationships between psychosocial factors and RTW after a cancer diagnosis.

First, most such studies assessed psychosocial determinants of RTW between the second and the fifth year after the cancer diagnosis while the majority of patients returned to work within the first year of diagnosis.^{2,3} This retrospective assessment of psychological factors may lead to memory biases which could be avoided if psychological changes due to cancer were assessed prospectively within the first year of diagnosis.^{2,3} Negative memory biases might also be exacerbated following traumatic events, such as a cancer diagnosis.¹ A prospective assessment of psychological factors within the first year of diagnosis could allow for a true account of the psychosocial experience of living with cancer and better identifying patients at risk of non-RTW.

In epidemiological studies, variables such as cancer-related fatigue or perceived social support have often been assessed using a visual analogue scale or a dichotomous item.³ These studies do not distinguish how the multiple dimensions of cancer-related fatigue (emotional, physical, and mental fatigue) and perceived social support (emotional, esteem, instrumental, informative, and negative support) could differentially impact cancer survivors' RTW. A recent longitudinal and prospective study, which included 68 women with breast cancer employed at the

time of diagnosis, investigated the associations between the multidimensional aspects of fatigue and perceived social support – measured within the year of the breast cancer diagnosis – with RTW.⁴ The authors have suggested that both physical fatigue and mental fatigue were negatively associated with the patients' RTW.⁴ A poor perception of negative social support was also associated with the patients' RTW.⁴ Studying the multidimensional aspects of cancer-related fatigue and perceived social support may help us to improve psychological counseling for cancer patients during the RTW process. Additional studies are therefore required to confirm which dimensions of cancer-related fatigue and perceived social support are more likely to influence (non-) RTW to better target appropriate psychosocial interventions for cancer survivors' RTW.

Qualitative studies have also suggested that psychological and behavioral factors were likely to influence RTW.^{1,5} Those investigations non-exhaustively assessed the meaning of work for patients, their attitude towards work, social support and pressures, social norms, expectations regarding RTW, RTW self-efficacy, coping mechanisms and optimism as possible variables associated with RTW.^{1,5} However, aspects of personality other than optimism remain to be assessed. Although personality has been shown to significantly influence the psychological experience of cancer, Gudbergsson, Fosså and Dahl have previously pointed out the lack of interest in the scientific field in exploring the effect of personality in the relationship between health and work.⁶ For example, Wang et al. have shown that psychoticism, extroversion and neuroticism were correlated with cancer-related fatigue in breast cancer patients after chemotherapy.⁷ Given the deleterious effect of this symptom, it is possible that personality would be associated with cancer survivors' RTW. Previous studies have also shown that conscientiousness and

neuroticism were associated with a longer duration of unemployment and non-RTW for healthy individuals.⁸ However, personality traits probably not only affect patients' RTW, but also influence their coping efforts.⁹ A specific aspect of coping and positive reappraisal, akin to the concept of benefit finding, remains also to be investigated. The qualitative study conducted by Barnard et al. concluded that coping becomes constructive for RTW when a cancer survivor resolves to reassess his/her life and self through meaning-making.⁹ This results in a renewed appreciation of life, appropriate lifestyle changes, and regained confidence in one's relational role.⁹ This psychological mechanism can be interpreted as a cognitive effort by the individuals (coping), but also as a long-term psychological outcome induced by cancer. While benefit finding is expected to start immediately after diagnosis, a positive psychological change – experienced as the result of struggling against highly challenging life circumstances such as cancer – has been conceptualized as post-traumatic growth.¹⁰ In a qualitative study conducted by Tiedtke et al., a number of patients recounted how their cancer experience gave them a different perspective on how relevant work was to their life.¹¹ The cancer diagnosis was described as a watershed event, impacting the way the respondents prioritized work relative to other aspects of their lives.¹¹ Along these lines, it would also be wise to understand the relationship between benefit finding and/or post-traumatic growth and RTW. It would be important to question the level of benefit finding and/or post-traumatic growth needed to protect psychological well-being – without having a deleterious effect on cancer survivors' RTW. Other psychosocial factors such as (non-exhaustively): the Locus of Control (i.e., the general belief that subsequent events depend on either internal factors or external factors), the perception of control over cancer and/or RTW (i.e., specific belief), perceived stresses over cancer and/or RTW, the fear of

recurrence, and the social distress induced by cancer, are all psychosocial constructs in psycho-oncology that have previously been associated with the quality of life of patients.² They are therefore possible psychosocial determinants of RTW among cancer patients that should be further assessed.

Despite the temporal changes in psychosocial factors among cancer patients that have been observed in the literature, to our knowledge, only temporal variations of cancer-related fatigue have been examined in relation with RTW. A recent study has underlined that a reduction of cancer-related fatigue within the 18 months of a cancer diagnosis was associated with an improvement in work ability.¹² Considering the strong predictive value of perceived work ability for RTW, these results are relevant in the questioning of psychosocial changes with regard to cancer survivors' RTW. The identification of psychosocial pathways, including – non-exhaustively – temporal variations in perceived social support, benefit finding, cancer related fatigue and post-traumatic growth after cancer diagnosis, and their associations with RTW, may also help to design better interventions aimed at assisting populations at risk of non-RTW.

In addition, due to the multiplication of observational studies, systematic reviews have been produced and have allowed the emergence of conceptual models of cancer survivors' RTW.^{2,3} However, those models hardly describe the psychosocial determinants underlying this outcome. Most such studies limit their analyses to exploring direct predictors of RTW which, unfortunately, do not take into account possible indirect relationships among the predictors and RTW (e.g. mediation pathways). Based on the transactional tradition, it would be necessary to explore the potential impact of indirect relationships among psychosocial factors to better understand the RTW process and how psychosocial factors (e.g. coping

strategies or perceived social support) could indirectly be related to work-related issues in cancer patients.

In conclusion, we have made five suggestions for improving the identification of psychological determinants of RTW in future research, which should make it easier to provide psychosocial counseling. These suggestions include to measuring prospectively psychosocial factors within the first year after diagnosis and examining the influence of other psychological factors, such as personality, benefit finding and post-traumatic growth, on RTW. Multidimensional aspects and temporal changes in psychosocial factors that are relevant to RTW should also be investigated and integrated in a conceptual and statistical modeling (e.g. mediation, moderation pathways) of RTW to uncover the mechanisms involved in the RTW process of patients diagnosed with cancer.

Key Points

- Psychosocial factors should be measured prospectively during the first year following cancer diagnosis.
- Psychosocial factors need to be assessed through their multidimensional aspects.
- Associations between personality, benefit finding, post-traumatic growth and RTW after cancer diagnosis should also be taken into account.
- Psychosocial temporal pathways' after cancer diagnosis and their associations with RTW should be investigated.
- A model of psychosocial factors including both direct and indirect relationship involved in the RTW process after cancer need to be developed and tested.

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Conflict of Interest Statement

The authors have no conflict of interest to declare.

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