Patterns of adaptation to cancer during psychological care
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CHAPTER 1

General Introduction
A diagnosis of cancer is a stressful and challenging experience for people. The disease, the treatment, and accompanying symptoms may have a substantial negative impact on people’s physical and psychological functioning. Specifically, symptoms of depression and anxiety are highly prevalent psychological problems in cancer patients, with 8% to 24.6% of cancer patients reporting clinically elevated symptoms of depression and 9.8% to 19% reporting elevated anxiety symptoms (Kreberger et al., 2014; Mitchell et al., 2011). Fatigue is one of the most common side-effects of cancer and cancer-related treatment (Lawrence, Kupelnick, Miller, Devine, & Lau, 2004), with 45% to 74% of cancer patients reporting fatigue (Langston, Armes, Levy, Tidey, & Ream, 2013; Wang et al., 2014).

During the past several decades, a wide range of types of psychological care (e.g., psychological education, cognitive behaviour therapy, mindfulness therapy) has been used to help people cope with cancer. A large amount of empirical studies and several systematic reviews and meta-analyses have been conducted to examine whether psychological care is beneficial in assisting people to cope with cancer, yielding mixed findings. For example, several reviews have demonstrated the effectiveness of psychological care in reducing cancer patients’ symptoms of depression, anxiety, and fatigue (Akechi, Okuyama, Onishi, Morita, & Furukawa, 2008; Kangas, Bovbjerg, & Montgomery, 2008; Zainal, Booth, & Huppert, 2013), whereas several other reviews concluded that psychological care plays only a limited role in managing these symptoms (Galway et al., 2012; Goedendorp, Gielissen, Verhagen, & Bleijenberg, 2009; Jacobsen, Donovan, Vadaparampil, & Small, 2007; Linden & Girgis, 2012).

Most of these previous intervention studies, with an experimental randomized controlled trial design, examined patients’ change in adaptation at a group level, so little is known about whether and how individuals differ from each other while receiving psychological care. It can be asked: are there subgroups of cancer patients who show distinct patterns of adaptation during psychological care? Further insight into whether and how individuals change with respect to their adaptation to cancer during psychological care may help to answer this question. Therefore, the overall objective of the current thesis is to identify subgroups of cancer patients with differential patterns of psychological adaptation to cancer during psychological care. Specifically, the current thesis examines psychological adaptation according to two aspects: (1) outcomes of adaptation to cancer (i.e., negative outcomes in terms of symptoms of depression, anxiety, and fatigue and positive outcomes including benefit finding) and (2) predictors of adaptation to cancer (i.e., personal resources that may
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enhance psychological adaptation including personal control and goal adjustment). This introductory chapter will elaborate on these two issues in turn.

**Part 1. Outcomes of adaptation to cancer: negative and positive outcomes**

The first part of the current thesis is focused on negative (i.e., symptoms of depression, anxiety, and fatigue) and positive (i.e., benefit finding) outcomes of psychological adaptation to cancer.

**Negative outcomes**

*Chapter 2* focuses on symptoms of depression, anxiety, and fatigue in cancer patients receiving psychological care. Empirical studies have reported close relationships between symptoms of depression and anxiety in cancer patients (Cheung, Le, & Zimmermann, 2009; Chow et al., 2008; So et al., 2009). Moreover, symptoms of depression and anxiety are also found to be closely associated with fatigue in cancer patients (Brown & Kroenke, 2009). Most intervention studies, although they include multiple target outcomes, have primarily examined the separate changes in each of the three symptoms and have not examined the possible comorbidity patterns amongst the three symptoms. The examination of the co-morbidity patterns of these symptoms as well as how people change in these patterns during psychological care may provide a better understanding of the effects of psychological interventions. Therefore, the main aim of *Chapter 2* is to examine how symptoms of depression, anxiety, and fatigue comorbid together in cancer patients receiving psychological care and how cancer patients transition between these patterns over time.

We zoom in on symptoms of depression in *Chapter 3*. Empirical studies have identified several distinct subtypes of depression in the general population and people with major depressive disorder (Carragher, Adamson, Bunting, & McCann, 2009; Herman, Ostrander, Walkup, Silva, & March, 2007; Hybels, Blazer, Pieper, Landerman, & Steffens, 2009; Hybels, Landerman, & Blazer, 2013; Lamers et al., 2012; Lamers et al., 2010; Lee et al., 2012; Lee, Xue, Spira, & Lee, 2014; Rodgers et al., 2014). For example, four distinct subtypes of depression (i.e., mild, cognitive, psychosomatic, and severe) were identified in a general population sample (Lee, Xue, Spira, & Lee, 2014). Yet, no study has been conducted to examine subtypes of depression in cancer patients. It remains unclear to what extent previous findings of subtypes in the general population and people with major depression can be generalised to cancer patients. Given the symptom overlap between symptoms of
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depression and cancer-related symptoms (e.g., sleeping problems, weight loss, psychomotor slowing), subtypes of depression in cancer patients may not be the same as those in the general population and people with major depression (Newport & Nemeroff, 1998; Raison & Miller, 2003). To fill this gap in knowledge, the main aim of Chapter 3 is to identify subgroups of cancer patients with distinct subtypes of depression before the start of psychological care. Moreover, this chapter examines whether patients with distinct subtypes of depression before the start of psychological care report different courses of depressive symptoms during psychological care.

Positive outcomes

In addition to these negative outcomes, people may also report several positive outcomes after cancer, such as positive changes in life priorities, feeling closer with family, and appreciation of life (Bellizzi et al., 2010; Helgeson, 2010; Stanton, Bower, & Low, 2006). The current thesis used the term benefit finding to capture the positive outcomes reported by cancer patients. Benefit finding involves a new evaluation of a situation that is previously observed as being problematic and a search for positive things and benefits in a stressful situation (Affleck & Tennen, 1996).

Benefit finding is examined in Chapter 4. Empirical studies have shown that people are able to develop benefit finding soon after a diagnosis of cancer, and an increase in benefit finding is also reported within the first year after diagnosis (Danhauer et al., 2013; Liu, Wang, Wang, Su, & Wang, 2013; Manne et al., 2004). Moreover, intervention studies also found that cancer patients reported increases in benefit finding while receiving psychological care, and these increases were related to improvements in psychological well-being (Antoni et al., 2001; Antoni et al., 2006; Cruess et al., 2000; Cruess et al., 2001; Garland, Carlson, Cook, Lansdell, & Speca, 2007; McGregor et al., 2004; Penedo et al., 2006). Calhoun and Tedeschi (2004) assume that distinct trajectories of benefit finding (in which they referred to as post-traumatic growth) may exist in trauma survivors who have developed benefit finding. For example, some survivors may report a sustained and enhanced benefit finding over time, and other survivors may experience a decrease in benefit finding (Calhoun & Tedeschi, 2004). This assumption has been confirmed by a previous study in people with HIV (Milam, 2004). Yet, due to the lack of empirical studies on this topic in cancer patients, it remains unknown whether the assumption of Calhoun and Tedeschi holds true for cancer patients. Therefore, the main aim of Chapter 4 is to identify subgroups of cancer patients with distinct trajectories of
benefit finding during psychological care. Moreover, to determine to what extent these trajectories of benefit finding could be related to negative outcomes in cancer patients, this chapter also examines the associations of benefit finding trajectories with changes in symptoms of depression and anxiety.

Part 2. Predictors of adaptation to cancer: personal resources promoting adaptation

In addition to these negative and positive outcomes, the current thesis also examines two personal resources (i.e., personal control and goal adjustment) that may enhance psychological adaptation to cancer.

Personal control

Personal control (also referred to as mastery) is defined as ‘the extent to which one regards one’s life chances as being under one’s own control in contrast to being fatalistically ruled’ (Pearlin & Schooler, 1978). Personal control plays an important role in psychological well-being across the life span, from early infancy to old age (Skinner, 1996). Specifically for those in stressful circumstances (e.g., people with cancer), a strong sense of control over life can help people address psychological distress caused by the stressors and enhance one’s psychological functioning (Folkman, 1984; Skinner, 1995). The adaptive role of personal control in relation to adjustment with cancer has been confirmed by empirical studies. Cancer patients with a higher level of personal control were found to report better psychological functioning (e.g., fewer symptoms of depression, anxiety, and distress) than those with a lower level of personal control (Barez, Blasco, Fernandez-Castro, & Viladrich, 2009; Henselmans, Sanderman, Baas, Smink, & Ranchor, 2009; Ranchor et al., 2010).

The cognitive adaptation theory assumes that stressful life events can easily undermine one’s personal control over life (Taylor, 1983). Particularly for people who are diagnosed with cancer, which can be regarded as a low control situation (Thompson, Sobolewshubin, Galbraith, Schwankovsky, & Cruzen, 1993), one’s sense of control may be challenged very easily. Indeed, empirical evidence has found a decrease in personal control after a diagnosis of cancer compared to the period before diagnosis (Ranchor et al., 2010). Therefore, regaining a sense of personal control is a key theme in the adjustment after stressors, as personal control may have a stress-buffering effect in stressful life events (Taylor, 1983). Empirical studies have found that cancer patients are able to recover loss of control in natural adaptation (Barez et al., 2009; Ranchor et al., 2010) as well as in the context of receiving psychological care.
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(Cameron, Booth, Schlatter, Ziginskas, & Harman, 2007; Cohen & Fried, 2007). Moreover, individuals also reported different changes in personal control after a diagnosis of cancer (i.e., increases, decreases, and stable), which could have different impacts on psychological well-being (Ranchor et al., 2010). It can be assumed that cancer patients also show distinct courses/patterns of personal control while receiving psychological care. Therefore, the main aim of Chapter 5 is to identify subgroups of cancer patients with distinct trajectories of personal control during psychological care. The association of the identified personal control trajectories with changes in psychological symptoms (i.e., symptoms of depression and anxiety) is examined as well.

**Goal adjustment**

According to the self-regulation theory, personal goals represent meaning of life; human behaviour is organised around the achievement of their desired goals (Austin & Vancouver, 1996; Carver & Scheier, 1998). Self-regulation involves a dynamic process of goal striving, in which individuals monitor their goal pursuit process and compare their current situation with desired goals. If this comparison yields significant discrepancies, people would experience goal impediments and feel stressful. To reduce the stress caused by the perceived discrepancies, people could put more energy into goal striving. Unfortunately, not every goal can be attainable. There are many factors (e.g., biological factors, socio-economic factors) that can impede one’s goal pursuit (Wrosch, Scheier, Miller, Schulz, & Carver, 2003). In the case of unattainable goals, if people keep pursuing goals, they would experience failure and stagnation, which may result in reduced well-being and more psychological distress (Carver & Scheier, 1990). In these situations, adjusting unattainable goals may be adaptive. Instead of continuing to pursue goals, goal adjustment is neutralising perceived goal disturbances and adjusting unattainable goals without changing the situation. The use of goal adjustment strategies may help to reduce the distress caused by goal disturbances, which in turn may restore psychological well-being (Wrosch et al., 2003).

Specifically, people with cancer may experience elevated levels of disturbances in their goals, and these goal disturbances are associated with more psychological distress (Offerman, Schroevers, van der Velden, de Boer, & Pruyn, 2010). In some cases, the disturbances in goals are due to uncontrollable situations. Therefore, it is especially important and necessary for cancer patients to use goal adjustment strategies to neutralise goal disturbances. In this thesis, according to the definition by Wrosch et al., goal adjustment strategies are defined by
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goal disengagement and goal reengagement. Goal disengagement refers to disengaging from unattainable goals, and goal reengagement refers to reengaging in new attainable goals (Wrosch & Scheier, 2003; Wrosch et al., 2003). Goal adjustment, especially goal reengagement capacities, plays an adaptive role in cancer patients’ psychological functioning (Offerman et al., 2010; Schroevers, Kraaij, & Garnefski, 2008; Schroevers, Kraaij, & Garnefski, 2011). However, most of these studies were cross-sectional, and no longitudinal evidence is available to support the stability/changeability of goal adjustment over time and whether increases in these capacities are beneficial for cancer patients’ functioning. Therefore, the main aim of Chapter 6 is to examine whether and how cancer patients’ goal adjustment capacities change during psychological care at the group level and at the individual level. This chapter also examines how changes in goal adjustment are related to changes in symptoms of depression, anxiety, and fatigue during psychological care.

The present research: study design

The current thesis applies a longitudinal naturalistic intervention design. Participants of the studies in this thesis are cancer patients who were seeking standard psychological care at a specialised psycho-oncology institution. All seven psycho-oncology institutions in the Netherlands (the IPSO institutions, for more information see www.ipso.nl ) are involved in the current research. This research is organised and conducted by an IPSO institution, the Helen Dowling Institute, in collaboration with the Department of Health Psychology at the University Medical Centre Groningen/University of Groningen. Participants were approached when they sought help at one of the seven IPSO institutions. A total of 384 cancer patients completed the baseline assessment before the start of psychological care (T1). The follow-up assessments were conducted after three months (T2) and after nine months (T3), with 278 patients (72% of 384) and 241 patients (63% of 384) completing the second and the third assessments, respectively. Most of the studies in the current thesis were conducted in the 241 patients who completed the third assessment.

Outline of the current thesis

The present thesis consists of two parts. The first part (Chapters 2, 3 & 4) focuses on outcomes of adaptation to cancer (both negative and positive outcomes). Chapter 2 examines the comorbid patterns of three commonly reported symptoms, including symptoms of depression, anxiety, and fatigue, in cancer patients receiving psychological care. Chapter 3
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examines subtypes of depression in cancer patients at the start of psychological care and whether patients with distinct subtypes report different longitudinal courses of depressive symptoms over time. Chapter 4 focuses on positive outcomes (i.e., benefit finding) reported by cancer patients and identifies subgroups of cancer patients with distinct trajectories of benefit finding while receiving psychological care and the association of the trajectories of benefit finding with the course of depressive and anxiety symptoms. The second part of this thesis examines predictors of adaptation to cancer: two personal resources (i.e., personal control and goal adjustment) that may promote adaptation. Chapter 5 examines cancer patients with distinct trajectories of personal control and the predictive role of these trajectories in the report of changes in symptoms of depression and anxiety during psychological care. Chapter 6 examines the changes in goal adjustment and the role of these distinct changes in goal adjustment in the course of depressive, anxiety, and fatigue symptoms in cancer patients receiving psychological care. Chapter 7 presents a general discussion. The current thesis ends with a summary in Chapters 8 & 9.