ACTA BIOMEDICA LOVANIENSIA 613

KU Leuven

Biomedical Sciences Group

Department of Public Health and Primary Care

Research Group Environment and Health

Huget Désiron

RETURN TO WORK IN BREAST CANCER PATIENTS

DEVELOPMENT OF AN OCCUPATIONAL THERAPY INTERVENTION TO BRIDGE THE GAP BETWEEN HEALTH CARE AND WORK

Thesis submitted in partial fulfillment of the requirements for the degree of “doctor in Biomedical Science”

Promoter : prof.dr. Peter Donceel (†) / prof.dr. Lode Godderis

Co-promoters: prof.dr. Angelique de Rijk / prof.dr. Elke Van Hoof

Guidance comission: prof.dr. Chantal Van Audenhoven / prof.dr. Marie-Rose Christiaens

Chair of the public defence: prof.dr. Marc Fransen

Members of the jury: prof.dr. Angela De Boer / prof.dr. Lut Braeckman / prof.dr. Geert Verleden

ISBN
D/
NUR:

WAT VOORAF GING / PROLOOG

De weerberichten zijn gunstig, de schoenen zijn ingevet, we kunnen de beweging goed gebruiken,… nu nog de gepaste route uitstippelen en dan kunnen we op weg. De redenen om deze wandeling aan te vatten en het doel ervan hebben veel facetten: gaat het om het leveren van een inspanning en daardoor zelf verder ontwikkelen, leren…? Gaat het om de wijsheid die daardoor kan groeien, met al de voldoening en inzichten die daarbij onderweg en aan het eindpunt te vinden kunnen zijn? Gaat het erom bij het bereiken van het eindpunt van het parcours een bijdrage te leveren aan de verbeteren van de samenleving in het algemeen en de mensen met borstkanker in het bijzonder?

Het antwoord op al die vragen zit niet in het “of” maar in het “en”…, Mijn diepe en welgemeende dank gaat uit naar al de mensen die bij het uitstippelen en plannen van dit parcours op een stimulerende wijze aanwezig waren:

- De gunstige winden om dit parcours aan te vatten kwamen uit Maastricht, waar Angelique mijn masterthesis promootte en er uit de vele stimulerende en inspirerende gesprekken met haar de “goesting” kwam aangewaaid om na het behalen van een masterdiploma de wereld van onderzoek verder te exploreren.
- Deeltijds lesgeven aan de opleiding ergotherapie aan de PXL Hogeschool combineren met een eigen onderneming bood de kans voor een combinatie van werken en studeren. Dit was haalbaar dankzij mijn collega’s en oversten van de PXL die onderweg als rasechte supporters in hun agenda’s de flexibiliteit inbouwden om knelpunten mee op te lossen. Christine, Roald en mijn collega’s in de opleiding ergotherapie, mijn oprechte dank en waardering daarvoor!
- Behalve het invetten van mijn schoenen is het klaarmaken van een rugzak met bijkomende benodigdheden voor de wandeling belangrijk. Wat de meest geschikte bepakking is voor een onervaren onderzoeker/wandelaar, kreeg ik haarfijn toegelicht van mijn ervaren gidsen: Angelique, Elke, en Peter. Nu we Peter moeten missen, was het een hele geruststelling dat Lode zijn expertise met zoveel betrokkenheid ter beschikking stelde. Met Chantal en Marie-Rose als begeleiders voor de tocht was ik meer dan goed omringd om de stap te wagen.
- Elke wandelaar zet ooit eens een eerste stap, en dat dit wetenschappelijk verantwoord wandelen voor mij een bron van kennis, kracht, energie en rijke ervaringen werd, dank ik aan de mensen die me daarbij met veel liefde, geduld en af en toe een ferme duw in de rug op weg gezet hebben. Merci, aan Ma en Pa, die het mogelijk maakten dat een eigenzinnige puber een studierichting volgde die perspectief op verder studeren – wat voor jullie zo belangrijk was – open hield. Daarzonder zou ik immers voor heel wat wegen die later prettige uitdagingen bleken te vormen, geen tolticket gekregen hebben!
- Ook merci aan vrienden voor het leven die, ook toen we elk ons eigen leven buiten Zelem uitbouwden, door hun interesse en het geloof in de slaagkansen van deze wandeling voor een

pakketje energie zorgden dat regelmatig zonder veel woorden werd aangevuld. Sonya die zorgde voor depannage en dat met zoveel kwaliteit doet dat de timing van de wandeling kan gerespecteerd worden, heeft daarbij een meer dan dikke pluim verdiend!

- De route werd aangevat met Peter als de gids die niet alleen de route zelf, maar ook de hoogtes en dalen in het terrein blindelings kende. Hij hielp om een haalbaar parcours uit te werken en het einddoel dat voor mij wel professioneel heel goed vertrouwd was (werkhervatting bij ziekte) te combineren met een werkwijze waar ik als nieuweling onwennig in stond (onderzoek). Met Angelique en Elke erbij als getrainde onderzoekers bleek echter dat ik team kon vormen met zoveel deskundigheid op vlak van arbeidsreïntegratie en psychosociale begeleiding dat de eerste stappen in het domein van “kanker en werk” met vertrouwen gezet werden.

Wordt vervolgd (zie Epiloog / vooruitzichten)…

TABLE OF CONTENTS

ABBREVIATIONS

ACS: American Cancer Society

BC: Breast cancer

CMOP: Canadian Model of Human Occupation

COPM: Canadian Occupational Performance Measurement

DM: Disability Management

ICF: International Classification of Functioning, disability and handicap

IM: Intervention Mapping

IPS: Individual Placement Support

MDT: Multi-disciplinary team

MDTs: Multi-disciplinary teams

MOHO: Model of Human Occupations

NCCS: National Coalition of Cancer Survivors (USA)

NDT: Neuro Development Treatment

OPPM: Occupational Performance Process model

OT: Occupational therapy

OTI: Occupational therapy intervention

OTIs: Occupational therapy interventions

PEO: Person-Environment-Occupation model

PEOP: Person-Environment-Occupation Performance model

QoL: Quality of Life

RTW: Return to work

WFOT: World Federation of Occupational Therapists

WHO: World Health Organisation

Chapter 1: General introduction

For all people younger than 65 whose health condition endangers their Quality of Life (QoL), returning to work is an important aspect in their lives. This thesis will specifically focus on return to work of employed breast cancer patients. Preliminary empirical research clarified that the needs for support in RTW for Belgian (FL) BC patients are unmet [1;2]. Aiming at answering these needs, this thesis will present different steps of developing an intervention to support RTW of BC patients in Flanders (Belgium).

This introduction will first go into the extent of the problem. The importance of work for BC survivors at working age is explored next. Two viewpoints of the approach of RTW will be described and the bottlenecks that influence RTW-processes. The choice to explore the potential of occupational therapy (OT) as a specialised health care profession that focuses on RTW will next be motivated. Further, the choice for the Intervention Mapping protocol as organizing device to combine literature and new research results gained in a new intervention. This chapter concludes with describing the objectives of this thesis, the research questions, the study-hypothesis and the outline of this thesis.

1 BREAST CANCER (BC) PREVALENCE, INCIDENCE AND SURVIVAL RATES (IN BELGIUM):

Worldwide as well as in Belgium. an increasing number of women are diagnosed with breast cancer (BC) before the age of 65 every year. This research is focused on female BC patients due to the high number of female BC patients compared to men (e.g., of all 6.015 persons younger than 65 who were diagnosed with BC in 2013 in Belgium. 5.988 were female. 27 were male). This choice aligns with international research that also focuses on BC in women [2-8].

1.1 Prevalence

More effective treatment leads to a growing population of people who survive the initial treatment period - being cured or in remission - or who live with side effects [9]. In the period between 2004 and 2013, 3% of the Belgian population was diagnosed with cancer. This is high when compared to worldwide data [10].

The WHO stated that the five most common cancers diagnosed in women were breast, colorectal, lung, cervix, and stomach cancer [11]. In Belgian women BC is by far the most prevalent compared to other tumour sites (35.3% of cancer cases) and initially occurs at an average age of 62 years (at date 5 years ahead of moment of retirement) [12].

1.2 Incidence

As indicated by the World Health Organisation (WHO), cancer is one of the leading causes of morbidity and mortality worldwide [11]. Compared to the prevalence anno 2012, an increased incidence of 70% during the next two decades is predicted, due to the combination of people getting older and better screenings [11].

In 2013, the Belgian Cancer Registry noted 42.917 new cancer diagnoses in Flanders of which 23.327 in men (54%) and 19.590 in women (46%) [10]. In 2013 more than 69% (n = 4.266) of the 6.191 patients newly diagnosed for BC in Flanders (see figure 1) were younger than 65, which clearly demonstrates that attention needs to be paid to employment and participations issues (see figure 2) [13;14]. With retirement age evolving to 67 and increasing labour participation of (older) women, many women are still professionally active when diagnosed (see figure 2).

Figure 1: Overview on ten most prevalent cancers in women in Flanders in 2013 [15]

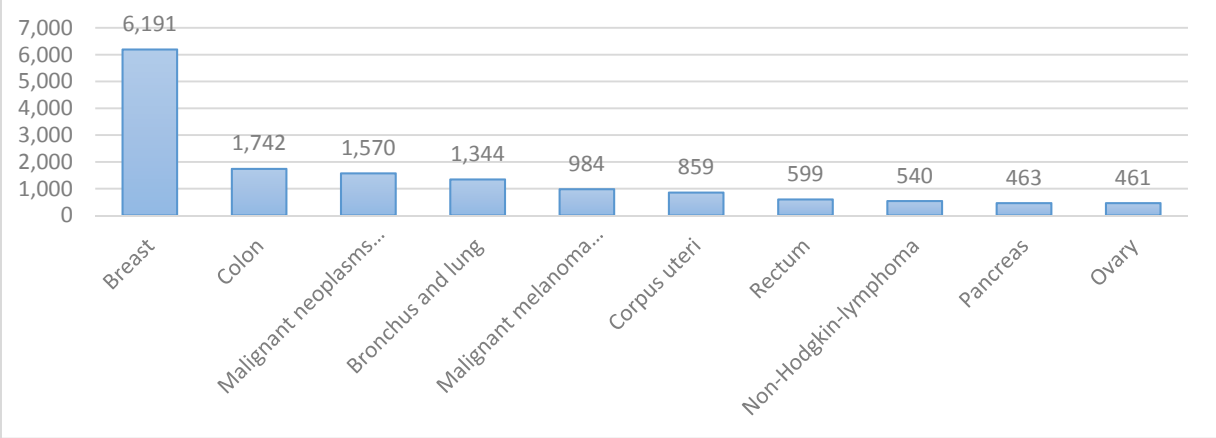
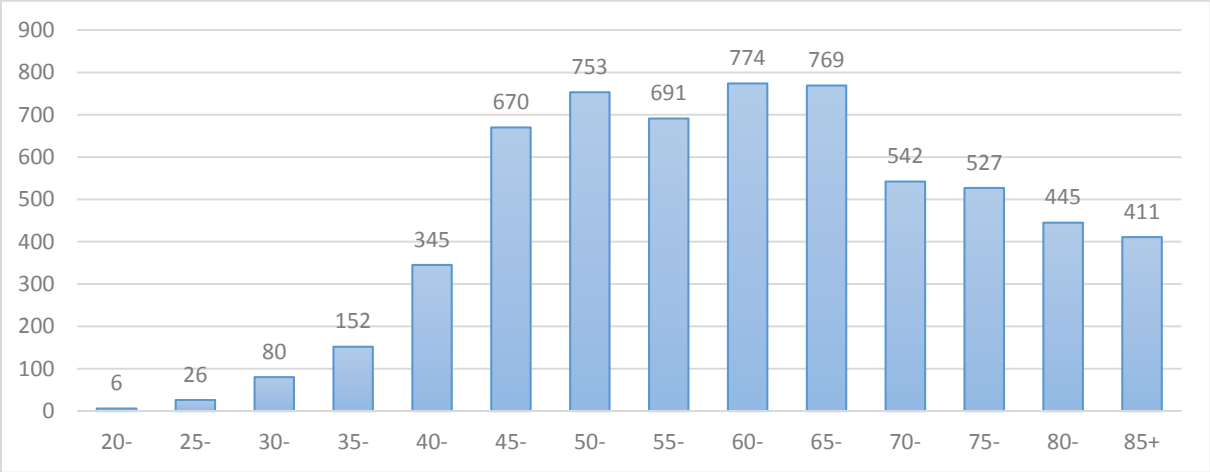


Figure 2: age and breast cancer incidence in women in Flanders in 2013 [15]



1.3 Survival rates

With increasing survival rates, a growing population of BC patients of working age is confronted with challenges to participate in work. For all patients with cancer, the worldwide 5-year survival has increased from about 50% in 1975 to almost 70% in 2006 [9]. During the past 20 years, BC mortality rates have decreased significantly in western societies, including Belgium [16]. Belgian BC patients, have a relatively good prognosis, with 5-year relative survival rates in females of 88.0%. Survival further declines during long-term follow-up, reaching a 10-year relative survival of 78.9% [13].

As published by the Belgian Cancer Registry, 80,099 females (14% of the total female population in Belgium) survive (on 31/12/2013) after having been diagnosed with BC between 2004 and 2013 [10]. Over time. the incidence rates for female BC remains stable, while mortality rates are decreasing by 2% annually [10]. Figure 3 depicts the representation of the Flanders results in relation to the overall Belgian data [10]. Statistic information for Flanders is available from 1999, for Belgium only since 2004. As figure 4 shows, long term survival has evolved in a positive trend, with a clear indication of the upwards trend in the 5 year survival rate.

Figure 3: Breast cancer in females 1-, 3-, 5- and 10- year relative survival (RS) in Belgium and in Flanders [10]

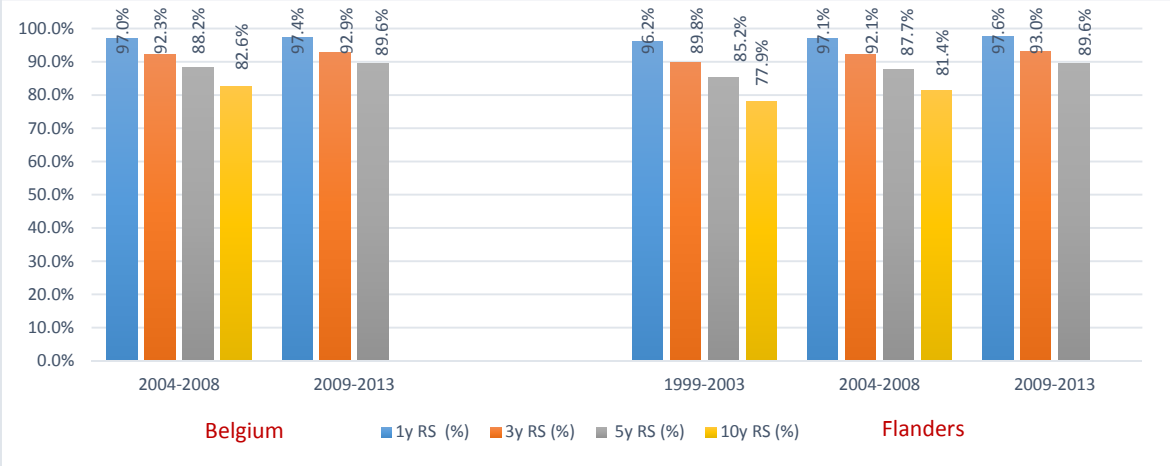
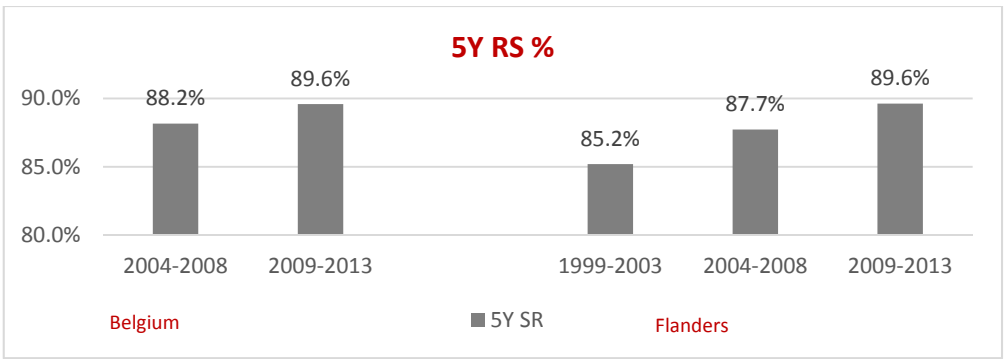


Figure 4: Breast cancer in females 5 year relative survival (RS) in Belgium and in Flanders [10]



The choice for female BC patients as focus of the RTW intervention to be developed in this thesis is based on the high incidence of BC, even though there is a large variety in types, stadia., treatment and treatment side effects for BC [6;16-27]. Preliminary empiric research indicates that psychosocial consequences of diagnoses and treatment as well as perceived functional hindrance do not correlate to specific pathological variables [28-31]. Since the age at diagnoses decreases and survival rates increase, the need for BC patients to return to work is increasing. In 2013, of the 5947 newly diagnosed women under 65, 2.083 (35%) of them were younger than 50 [10]. This needs-driven thesis focuses on BC patients as the largest group of cancer survivors in order to maintain a clear focus. This does not mean we ignore similar needs of other cancer survivors, who's specific reality might be considered when – in further research – potential generalisation of our findings might be researched.

1.4 RTW after BC

In Belgium, information on the number of BC patients that are on sick leave less than 1 year is not available. The National Institute for Health and Disability Insurance reports on patients at working age who are on sick leave longer than 1 year. Table 1 shows the number of female BC patients receiving social insurance benefits due to sick leave (> 1 year) for 2009-2014 [32]. Literature shows that chances of getting back to work strongly decrease for patients on sick leave for more than 6 months [33;34]. This indicates the high risk of not returning to work for BC patients listed in table 1.

Table 1: Number of female BC patients (employees) on sick leave longer than 1 year [32]

Employees	Number
2009	5.118
2010	5.600
2011	5.781
2012	6.167
2013	6.552
2014	7.032

Table 2 shows that in 2013 1.119 female BC patients left the system (239 deceased (21%), 115 were legally excluded (10%), 252 retired (22.5%), and 414 got back to work spontaneously (36%°). Compared to the 6,552 patients who were on >1 year sick leave in 2013 (see table 1) 1,712 female BC patients (25%) combined work and sick-leave in the same year [32]. With 1,119 BC patients leaving the system (17%), 3,721 patients were not working in 2013 due to BC diagnosis during more than 1 year (56%).

Table 2: number of female BC patients leaving the social benefit system (by reason) [32]

Legend	2009	2010	2011	2012	2013	2014
No data available	127	101	134	146	101	116
Absent at moment of control	0	0	2	0	0	1
Deceased	265	216	206	194	239	242
Exclusion (end of license)	138	149	142	132	113	115
No longer conform legislation	5	0	0	0	0	0
Retired	48	203	261	247	252	281
Work resumption without acknowledgement of the medical counsellor	1	0	0	0	0	0
Back to work spontaneously	307	342	406	389	414	460
Total	891	1.011	1.151	1.108	1.119	1.215

In Belgium as well as in neighbouring countries (e.g., the Netherlands and Germany) almost 40% of BC patients at active age are not successful in returning to work [35-38]. In the sixty-four studies Mehnert included in a systematic review, between 26% and 53% of the survivors lost their job or stopped working over a 72-month (6 years) period post diagnosis. A high proportion of patients experienced at least temporary changes in work schedules, work hours, wages and a decline in work ability compared to non-cancer groups [39]. Paalman et al. found that the increased risk of adverse employment outcomes up to 10 years after BC could be - at least partly – explained by BC treatment [40].

2 SURVIVORSHIP. AND THE IMPORTANCE OF WORK

From the moment patients at working age have to deal with the diagnosis, treatment and treatments' side effects. Many questions arise regarding the consequences on their ability to work. This is the case for all cancer patients including BC patients [17;21;26;41;42]. In order to develop a RTW intervention targeted at BC patients, it is essential to define 'survivorship' and to have a clear view on the importance of work for (breast)cancer survivors.

2.1 Survivorship

The terms 'survivorship' and 'cancer survivorship' are widespread, but refer to many different cancer experiences. Numerous interpretations of '(cancer) survivorship' are available in the international research literature but none of these are universally accepted [15;27].

At least three distinct phases are associated with cancer survival: i) the time from diagnosis to the end of the initial treatment; ii) the transition from treatment to extended survival; and iii) long-term survival [43]. Each of these phases are associated with specific issues in care needs. in coping efforts and in perspectives for future life [43]. Throughout these phases, the patients' perceptions on how these

experiences influence their lives may differ when shifting from one viewpoint to another as their medical situation evolves. Tiedtke et al. identified three different types of experiences on being work-disabled within the context of BC: (1) disruption, with the feeling of irreparable loss. despair and no hope for the future; (2) episode, an unpleasant and inconvenient period after which life continues as before; and (3) meaningful period, during which new life priorities are set. These experiences may alter during the period after diagnosis and there is no specific order or evolvement [44].

As it highlights the patients' perspective and in order to emphasize on the patients' experiences, the definition of survivorship formulated by the US National Coalition of Cancer Survivors (NCCS) will be used in this thesis.: *"an individual is a cancer survivor from the time of diagnosis through the balance of their life"*[9]. As a consequence, in this manuscript 'patient' and 'survivor' will be seen as interchangeable. In the text however, the term "patient" might occur more often, referring to the first (curative) phase in survivorship which this thesis primarily focuses on.

2.2 Importance of work for cancer survivors

This thesis focuses on the role of work in BC patients' lives. The importance of work is highlighted by the International Labour Organisation (ILO): *work is not only an economic item, but also a means allowing a person to prove his talent. self-confidence and self-respect and to participate fully in society* [45]. When analysing the importance of work and the meaning work has to BC survivors. Rasmussen and Elverdam define working life as "*the social relations at work. as well as the meaning of work. as it reflects social norms and values in society related to work. since these elements are important parts of an individual identity"* [46].

Various studies note that cancer patients attribute great meaning to work [36]. Clearly, work forms a central basis for self-identity and self-esteem, provides financial security, establishes and maintains social relationships and represents an individual's abilities, talents and health [22;36;47-49]. Loisel and Anema refer to a large body of evidence showing that work is generally good for a person's health. They found that work disability contributes to 2–3 times increased risk of poor general health. 2–3 times increased risk of mental health problems and 20% excess mortality [44;50].

From the BC patients' perspective, the word 'return' in 'return-to-work' is essential. It refers to 'back to normal', but this meaning could be tempered by the challenges survivors encounter during the return to work process [46;51]. Literature clearly indicates that for BC patients, being able to (return to) work, is an important contributor to their QoL [4;8;52-55]. However, it must be acknowledged adverse working conditions might negatively affect QoL of BC patients [44;56]. From diagnosis onwards and throughout the treatment period, cancer patients are confronted with health-related restrictions, possibly hampering their ability to work [1]. The uncertainty about the level of work-(dis)ability BC patients will be confronted with after diagnosis and treatment. contributes to feelings of vulnerability, anxiety and

insecurity [44;51-53;56;57]. Also, the work itself might be burdensome, for example due to too high demands and lack of support [58;59].

In this thesis, RTW support is seen as a – at date lacking - specific part of the MDT service that aims to contribute to BC patients' QoL [28;60]. The focus of the intervention developed in this thesis, is on supporting RTW as a means that can be added to health care services already available for survival and restoring BC patients' QoL during survivorship.

According to the focus of this thesis on patients' perspectives, QoL is defined as '*a woman's sense of well-being which stems from satisfaction or dissatisfaction with the areas of life which are important to her'* [26]. The outcome of an RTW intervention for BC patients thus should not only be actual RTW (primary focus of the intervention) but also question the effect of (not)being at work on the BC patients' QoL.

Being work-disabled due to BC also puts pressure on the economic situation and increases feelings of anxiety and depression [61]. The need to preserve financial independency, the requirement to provide income for the family and/or the necessity to be able to respond to other roles in life (e.g., being a mother. a partner, a volunteer) might form part of the meaning patients assign to work [44;51;56;58;62]. When those meanings of work are threatened, patients might feel the urge to prematurely return to work or continue working, even though being severely work-disabled [58;63].

Whatever the mix of positive and negative effects is, from the moment a person is unable to work the meaning of work and working life appears more eminent since at that moment the structure of daily life is being threatened [44;46]. In addition to having paid work which provides social inclusion and reducing financial problems, cancer patients report a positive attitude towards other forms of labour participation (e.g., volunteering. housekeeping). These types of unpaid work also offer a sense of control in insecure times and a sense of self-worth. which gives meaning to life and takes the patient's mind off the illness [64].

To preserve a clear focus, we will use the term "employment" when referring to paid work with a regular employment contract in a private or a governmental organisation, in full-time or part-time engagements. When the term "labour participation" will be used in this thesis we will be referring to all different types of labour including – combinations of – housekeeping, voluntary work. self-employed work etc. based on the conceptualisation presented in the International Classification of Functioning, disability and handicap (ICF) by the World Health Organisation [65-67]. The ICF is largely recognised as an overarching theoretical reference when participation for people with health problems is at stake [68-73]. Therefore, this PhD project also refers to the ICF as theoretical frame of reference.

This thesis does not take self-employed BC patients into account, due to the large differences that exist in legislation and social insurance in Belgium between workers that are employed and those who are self-employed. International literature also refers to self-employed cancer survivors as a separate target group regarding RTW. Limiting the target group of this research to people with an employment contract improves the comparison of our results to international findings.

3 RETURN TO WORK: TWO VIEWPOINTS

The concept of RTW since the term "RTW" is widely used but it means different things [74]. Two possible viewpoints are used in research: 1) RTW as the outcome of intervention and 2) RTW as a process. Both will be used in this thesis. as will be explained.

In many studies, RTW is defined as the end-point, expressed in terms of reaching the resumption of work [4;47;75]. In literature. a wide variety of RTW outcome measures are presented which vary from paid work in employed patients to activities which cover other aspects of activity and productivity in patients' lives (e.g., housekeeping. volunteering) [4;47;75]. The use of different RTW outcomes is a consequence of the large variety of interventions studied. For example. in the protocol by Stapelfeldt et al. RTW is defined as at least 4 consecutive weeks of no social transfer payment or attending a modified job [76]. De Rijk and colleagues differentiated between RTW (defined as working again for the first time after reporting sick. even when working fewer hours than indicated in the employee's contract) and Lasting RTW (defined as RTW without recurrence) during 13 months follow-up [77]. In many other RTW studies subjective outcome RTW measures are used, such as self-efficacy. Self-efficacy in return to work (RTW-SE) is defined as the belief workers have in their ability to meet the demands of their job. upon return to work [78].

In addition to RTW being an outcome, the RTW concept is also regarded as a process which evolves over time during illness and treatment. In that period, difficulties occur for many survivors due to chronic physical. emotional and occupational problems [79]. Consequently, the meaning of work for BC patients varies over time. Qualitative investigations conducted by Parsons et al. highlighted important psychosocial features of work and RTW as an ongoing process including workplace conditions and social relations, attitudes and beliefs (of workers. co-workers. supervisors. clinicians), decision-making behaviour and social structural influences [80].

In their UK based study, Yarker et al. identified two discrete return to work processes or periods: the return to work experience during the initial period of return and the post-return to work experiences [81]. With regard to the return-to-work process, communication within the workplace appeared to be of high importance as well as the need to provide better support and guidance to cancer survivors' line

managers and colleagues [81]. Consequently, any RTW intervention needs to guarantee the match between the patients' healing process - including both biomedical as well as psychosocial factors - and the intervention. Stergiou-Kita et al. concluded that RTW is a continuous process. including planning and decision-making. focusing on work readiness and symptom management [51].

Defining RTW in terms of a process which starts at the moment of diagnosis involves a multi-dimensional and divers approach. which ranges from a simple intervention (e.g., a consultation between an employee and employer), to very complex interventions (e.g., a multi-disciplinary support programme set up at the hospital to help the patient/employee to gradually RTW with clear consideration of requirements of the workplace) [82].
RTW support can be concretized with clear indications of the goals (outcomes) as well as for the pathway (process) that preferably is to be followed in order to reach those goals.

4 RETURN TO WORK SUPPORT IN (BREAST) CANCER

Tamminga et al. concluded that only a few interventions primarily target enhancing RTW in patients with cancer [36]. More specifically there is a need for better guidance for clinicians. survivors and employers about how to manage labour participation in cancer survivors [61]. In order to help resolve health related restrictions caused by illness and treatment. caregivers must take the patients' situation (e.g. health issues, family obligations, life choices) into account together with the work situation (e.g., occupational health legislation, type of work, type of contract, transport to work) and incorporating the patient's personal and societal context [6;23].

Providing adequate support in RTW that respects the stakeholders' goals and offers a process that fits their points of view throughout the process. such support should anticipate on potential hindrance caused by bottlenecks on different levels.

4.1 Bottlenecks

Although there is a lack of published RTW interventions [36;76], the published studies point at several bottlenecks that might play a role in our target group. Taskila et al. indicated the lack of (systematic organised) after-care, but also the lack of coordination between different actors and fields of legislation [83]. Differences in perspectives of different stakeholders involved in the RTW process, who all have a role in the societal context of the country where the RTW intervention is enrolled, complicates RTW support [37].
Apart from having to comply with rules and regulations in health care and social insurance, BC patients also have to respect legislation at the workplace (e.g., occupational health, labour legislation) [84]. Prevention of work disability for cancer patients is subject to multiple legal, administrative, social, political and cultural obstacles and to a multitude of factors and stakeholders [85].

Escorpizo et al. concluded that implementing a RTW intervention should be considered as a process at high risk of failure and consequently requires a strategy painstakingly adapted to the barriers and facilitators identified in the field [69]. An approach tailored to the patients is needed, as individuals with the same impairment may experience very different types and degrees of restrictions, depending on the context [86]. It is therefore important to develop a RTW support intervention; which starts from the patient perspective and also incorporates the essential stakeholders and contextual issues, as is the focus of this thesis.

Apart from the hindrances expected and predicted by medical staff, cancer survivors might also encounter unintended consequences of performing everyday work tasks due to the physical and psychological challenges they experience following primary treatment. For many female BC patients, this includes having to deal with caring for one-self, children and home making [58;84;87]. Characteristics of chronicity may also complicate the RTW process (chronic diseases are by definition permanent and patients need to get used to changed abilities and/or reduced career prospects). The unpredictability of the disease trajectory might give further rise to feelings of uncertainty and anxiety. Finally, the day-to-day variability of symptoms can hinder work planning and may create credibility problems at work [88].

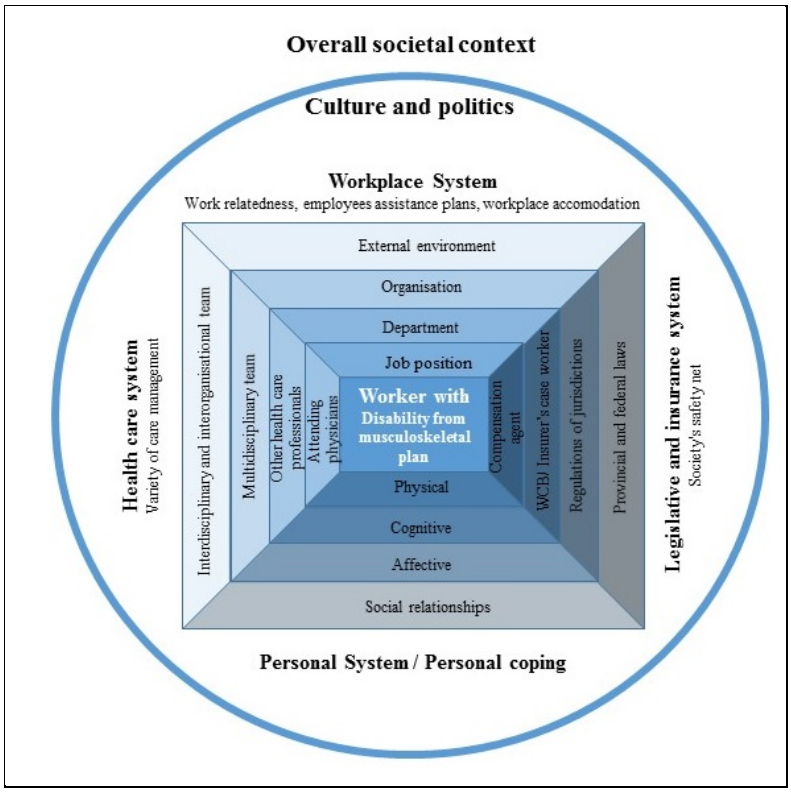
Chronic diseases are often invisible to other people at the workplace (e.g., co-workers, supervisors), which might contribute to misunderstandings. Also, disclosing their illness may be risky because of discrimination. In return, during moments when patients are having a hard time keeping up their level of performance, telling others might clarify the situation and create options for accommodations [88;89].

This issue may be of extra importance in a workplace situation where supervisors, co-workers and cancer survivors all may experience unforeseen negative or positive consequences of the RTW or of efforts to sustain the work status [87]. All stakeholders who were expected to execute the RTW policy they agreed upon in Maiwald et al.'s research on workers with various illnesses, struggled with putting this into practice. They had to deal with a capricious RTW process, including an unpredictable recovery process and unexpected health issues in varying cases of RTW [90].

Varekamp et al. detected that the influence health care workers have on their patients can either support or hamper RTW. In discussing work related issues with patients, health professionals need to address themes which are important to the individual patient [89]. In his research on RTW in patients in need of psychological care, Knaeps concluded likewise [84;91;92]. The caregivers' attitudes might support not working and thereby - unintentionally - complicate the RTW process. Health care professionals appear to underestimate factors which are important from the patient's perspective, especially support from employers [8;89]. Bains et al. concluded that enhancing training for health professionals to provide better work-related support to patients during the early stages of treatment, could enable survivors to manage their work more effectively [93].

The complexity of the context is clearly illustrated by the 'arena in work disability prevention' developed by Loisel et al. [85]. Figure 3 represents their visualisation of the complexity of the RTW context for workers with musculoskeletal pain, whose problems appear to be rather similar to those of BC patients [85;94]. Consequently, one cannot ignore the importance of the societal context in which the intervention is meant to be enrolled and the large variety between the individual patients that is possible due to the amount of factors involved.

Figure 3: The arena in work disability prevention [85]



The complexity of this arena illustrates that in order to support individual BC patients with their RTW, many factors at different levels have to be integrated in the intervention, and – as the importance of factors will differ across individuals - the intervention needs to allow for tailor-made solutions for individual patients. From the start of their survivorship, individual BC patients need support in coping with the above mentioned bottlenecks and complexity of their situation. Such supports need to be provided throughout the whole recovery and rehabilitation process [51].

4.2 Health care based support

Providing early occupational rehabilitation parallel to cancer treatment focusing on preparations for RTW and making arrangements together with the employer regarding work accommodations, graded RTW etc. should improve the RTW-process and reduce recurrent sickness leave absence after RTW [5;27;63;95-97]. Cancer survivors need integrated support from health and vocational professionals to maintain and return to work after cancer diagnosis and treatment. A collaborative approach is also

recommended which should include medical guidance by medical staff, emotional health concerns addressed by psychologists, cognitive issues supported by neuropsychologists, occupational therapists to evaluate functional abilities, and vocational counsellors to evaluate alternative vocational options [57]. The support that is needed by BC patients when facing the challenge of (getting back to) labour participation therefore must not only take medical, emotional, relational and psychosocial issues into account. Environmental and social barriers, which exist at the workplace and in the social community, have to be included to fully meet these patients' needs [8;98-100]. It is assumed that health care based support for RTW should apply competencies; which combine health care (para-) medical knowledge to workplace related knowledge. Based on the assumption that OT potentially might provide these competencies, this thesis therefore investigates that potential of OT in a health care based RTW intervention for BC patients.

4.3 Potential role of Occupational Therapy in health care based support

OT is a client-centred health profession involved with promoting health and wellbeing through what is referred as 'occupation'. According to the World Federation of Occupational Therapists, "*occupations refer to the everyday activities that people do as individuals, in families and with communities to occupy time and bring meaning and purpose to life. Occupations include things people need to, want to and are expected to do"* [101]. Cole and Tufano refer to Christiansen to define occupation *"as the principal means through which people develop and express their personal identities*" [102] (page 4). They cite Trombly to state that the use of 'occupation' is *"a treatment end goal and a means to remediate impairments. In both dimensions, meaningfulness and purposefulness are key therapeutic qualities.* Purposefulness is hypothised to organise behaviour and meaningfulness to motivate performance" [102] (page 4).

As paramedic health care professionals, occupational therapists might be well positioned to address the abovementioned support in cancer survivorship related to work based on their vocational rehabilitation knowledge and responsive practice philosophy [103]. By doing so, occupational therapists are able expected to be able to connect patients' needs and perspectives to those of caregivers and employers involved in return to work [104]. Occupational therapists have a broad education in the medical, social behavioural, psychological psychosocial and occupational sciences, which equips them with the right attitudes, skills and knowledge to collaboratively work with individuals or groups [104].

In Belgium, OT education is organised by the different communities (Flanders, Wallonia, German speaking part) on bachelor level. The 8 Flemish educations and the professional organisations of OT in Flanders (Vlaams Ergotherapeutenverbond) collaborate in defining the curriculum of the OT educations to ensure that competencies in the education connect to the WFOT standards: "*The OT student is trained to become an occupational therapist and he will become an "expert in making 'acting' possible", based on the knowledge area of occupational therapy. Orientation towards meaningful, daily and social acting*

is key and the relation between the human being, his acts, health and wellbeing is the point of departure. As an expert in making 'acting' possible, the occupation therapist works client-centred, occupation-based, context-based and evidence-based. The acting of clients is used both as an end as means of the occupational therapy [105;106].

The curricula of the educations enable young graduates to professionally engage in rehabilitation and participations of humans with health-related problems that hinder the latter in being active and/or participate in society [107;108]. The training provided in Flanders, is audited every 5 years by a board of experts and meets the quality standards as they are imposed by the WFOT [106;109]. OT masters can respond to the growing need for scientific research and development in Belgium (FL) [110]. In Belgian (FL) health care, OT is strongly embedded in rehabilitation for patients with physical and mental health problems. Occupational therapists also are member of the MDT in hospitals, education, home-care, well-being at work, social insurance organisations, employment counselling and research in health care. as well as engaging in private practices [105].

Wright argues that Occupational therapists are ideally suited to guide the transition experienced by people from a patient role (when diagnosed) to the role of participant/worker [111]. For those patients, occupational therapists can intervene by adapting the environment, selecting contexts and carefully choosing adaptive equipment or services to help them reach their goals in life (see table 1) [112].

Aiming at improving the theoretical foundation of their discipline, occupational therapists need to explain the theoretical concepts that underpin their practice [113]. OT theory is separated into two sections that are closely related: 1) conceptual models providing "ways to think" and 2) models of practice offering "ways to act" [114]. There is no consensus yet on which conceptual practice model is best to use for OT. OT models are not specific for specific diseases etc. but emphasize different factors that have to be addressed by the OT to support functioning in daily life [113;115;116].

The paramedical and ergonomic knowledge of occupational therapists might provide additional expertise to the current (Belgian) oncological care in collaboration which other health care professionals (at the hospital) and other stakeholders at the workplace (e.g., employer, occupational physician, supervisor) and society (social insurance physician, other forms of labour participation).
However, evidence on effectiveness of OT in RTW appeared to be scarce at the start of this PhD research. Knott et al. found when occupational therapists are involved in MDT based RTW interventions for cancer patients, their specific role is to support activity and participation, including RTW support [117]. Shaw et al. indirectly supported the statement that OT might provide added value to RTW, highlighting the finding that successful RTW coordination may be more dependent on competencies in ergonomic job accommodation, communication and conflict resolution than on medical training [118]. OT interventions (OTIs) are mostly set up at practice-empirical level, starting from the patients' needs and making use of OT reasoning to build content of the intervention [119-122].

There is a lack of systematic knowledge on whether and how OT affects RTW in BC patients. Before an OT intervention (OTI) is to be developed for RTW in BC patients, it is thus necessary to first review the existing evidence. Further, and in order to prevent implementation problems, the opinions of experts regarding the RTW support of BC patients in Flanders, need to be studied systematically.
Next, a theoretical conceptual model which could structure the OT engagement in the RTW process in BC patients and which offers a solid base to the roadmap which supports structuring the RTW support, is lacking. A part of the development of an OTI for RTW in BC patients with paid work should thus be to review which model is the best OT model to support RTW of BC patients with paid work. In this thesis, a RTW intervention will be developed that will be initiated in health care and that aims to meet the challenges presented by the abovementioned current bottlenecks and complexity that hinders BC patients in returning to work.

5 GUIDING THE DEVELOPMENT PROCESS

In this thesis, we choose for Intervention Mapping (IM) as a tool for systematic intervention development. IM is an organising device, not specifically focused in RTW interventions, using an iterative process that forces the researcher to move back and forth between the steps and by doing so, connect theory and research findings thoroughly to the practice, in order to safeguard implementation in the patients' realities [123;124]. This helps to organize our thinking as we moved on from theory and evidence to practice [125-128]. A combination of the search terms "strategies"; "intervention development" and "return to work" were used in the search engine for KULeuven (LIMO). The results from this search referred to "intervention mapping" as a useful approach to develop RTW interventions, including patients in chronicity and BC patients [123;124;129;130]. Second, this approach appeared to be valuable if a large variety of needs are already available [123;124;126;129-136].

The IM protocol provides a systematic approach of the development process that helps to move on from theory to practice (and back). It is a tool for the development process itself, rather than a frame of reference for - use of – theories and / or models [125;126]. For this thesis, the first four steps are important.: 1) Needs assessment; 2) Identification of outcomes, performance objectives and change objectives; 3) Selecting theory and evidence based methods and practical applications; and 4) Developing intervention components and materials.

1. Needs assessment provided as a first step in de IM protocol enables us to clearly focus on patient needs and – further in the development process – to connect to needs of health care providers (e.g., occupational therapists) and employers.
2. Focus on change objectives in the second step of the IM protocol facilitates a more in depth description of the specific changes that the RTW intervention should focus on in BC patients as well as in occupational therapists. The construction of the matrices as suggested in the IM

approach guided a focused search in literature to ensure evidence based foundations of the choices made.

3. Selecting theory, evidence based methods and practical applications as suggested in step 3 of the IM protocol stimulated our research to connect to theories and methods in literature.
4. Based on these 3 steps, an intervention needs to be described.

The essential aspect of the IM method is that a model of determinants is initially built, followed by a reasoning as to how each determinant, in our case RTW, is most effectively affected. To build the model of determinants, all available literature was used and empirical data was collected for gaps in the literature. As this thesis aims at the development of an OTI for supporting RTW in BC patients, the two other IM steps (that is 5) planning for programme adaptation, implementation, and sustainability; and 6) planning for evaluation) are not addressed. Of course, the first 4 steps determine the content of step 5 and 6.

6 RTW FOR BC PATIENTS: JOINT CONTEXT, THREE STARTING POINTS

By using the IM protocol, the iterative process that is essential in the approach (steps 1 to 4) resulted in the recognition of the perspectives of the three primary stakeholders (e.g., patients, care providers and employers) involved in the RTW process of BC patients who share the same societal and legal context but perceive this context from different viewpoints. Without ignoring the role of other stakeholders (e.g., social insurance, governmental administration), this thesis regards these other stakeholders as having a more passive role, even though their representatives can be part of individual actions in the case-managed intervention. This stance enables the setting up of an intervention with a clear focus on the role and impact of the aforementioned primary stakeholders who are involved in any RTW process, regardless of the social and political context it is enrolled in. Our intervention development is therefore founded on three starting points: 1) the patient's needs; 2) perspectives of care providers; and 3) employers' perspectives which will be addressed below.

6.1 RTW support starting point 1: the patient's needs

As previously mentioned, research shows BC patient needs are crucial as a starting point for RTW support. The RTW support developed in this thesis will focus on BC patients, regardless of the type of tumour and stage of the disease, based on the WHO statement that '*people with similar impairments can experience different restrictions, depending on the context'* and that the opposite could also be true '*people with different impairments can experience similar restrictions, depending on the context*' [86]. This indicates the focus of the RTW intervention must be on needs at individual level, taking the individual patient's context as the starting point for an individualised RTW intervention with specific proposals on how to protect work ability / prevent work disability [100;137;138].

Without neglecting their importance for BC patients, the intervention to be developed does not address medical, emotional and relational needs of individuals when diagnosed with cancer unless they relate to RTW. This is the expertise of other members in the MDT. As treatment mainly focuses on the cancer itself and side effects, cancer patients report unmet needs regarding psychosocial issues during and after treatment, highlighting their motivation and expectance to be able to get back to – a certain form of – work.

Especially during the first three to six months after diagnosis, BC patients are in need of information and support, which only a few adequately receive [1]. Study results of Pauwels et al. revealed that only 15.6 % of the 465 BC patients in their study felt adequately supported regarding the needs they had in relation to maintaining or regaining work [38]. Nilsson et al. point to the interplay between women's own preferences, perceived competence, outer opportunities and the actions each woman takes with regard to RTW in relation to BC. Nilsson et al's results align with the findings of Pauwels et al. and Tiedtke et al., highlighting the need for women to find balance. BC patients do not want to be labelled as cancer patients, but they need some support, including allowances [38;100;139]. Tiedtke et al. concluded that the current RTW support available does not meet the Belgian BC patients' need for RTW support [44;92]. This indicates a clear need for RTW support when aiming to maintain or improve labour participation and - thereby - protecting patients' QoL [93;100;139-142].

Research findings are almost unanimous in stating that issues at work and RTW must be discussed with the patient as early as possible, preferable from the moment of diagnosis on [22;64;98;143;144]. It has also been made clear that patient needs are dynamic, influenced by many aspects in their lives, including treatment and reactions from other stakeholders they encounter during the treatment period (e.g., medical staff, family and friends, other patients, employer and occupational health staff, insurance physicians and administrative workers) [38;100;138;139;145]. Godderis et al. suggested successful reintegration requires the involvement of the patient and a clear communication between all stakeholders from the start, because they all play a crucial role in the return-to-work process [146].

6.2 RTW support starting point 2: care providers

RTW intervention programmes offered by medical staff in hospitals, by rehabilitation staff in rehabilitation (after-care) centres and by social workers in support offered by governmental or insurance organisations, etc. vary widely where content is concerned [4;47;76;147-151]. There is strong agreement regarding the need for, and the effectiveness of, a multidisciplinary approach, but it is not clear which health care providers need to be involved in order to answer the needs of an individual patient at a particular moment and how this might contribute to reaching the patient's goals [152].

Research results are often unclear about the different roles or functions appointed to different team members [117]. The Cochrane review on interventions to enhance return-to-work for cancer patients included 15 studies, of which five described research in the United States of America, three in the United

Kingdom, two in Sweden, two in the Netherlands, two in Germany and one in Australia. Different settings were used in the seven studies which included BC patients, including a broad variety of care professionals who provided the described RTW interventions: oncology nurse (three studies); physical therapist; occupational therapist; occupational nurse; occupational physician; psycho-therapist; treating specialist; surgeon; clinical psychologist; exercise specialist and medical social worker, combined in different approaches [4].

In addition to that, Gardner et al. identified a set of 10 groups of essential competencies (knowledge, skills and attitudes) required to achieve optimal RTW outcomes in injured workers [153]. Nilsson et al. stated that all stakeholders involved in RTW for BC patients should have knowledge of the role of other stakeholders involved in the RTW process. This knowledge would facilitate a closer collaboration, which is needed to find flexible solutions and adjustments for individuals, leading to RTW goals [138]. RTW support should therefore apply competencies, which combine health care (para-) medical knowledge to workplace related knowledge [36;72;154-156]. These findings also clearly indicate the necessity to close the gap which – currently – exists between the patient, caregiver and employer, due to a lack of mutual knowledge regarding the participation of other stakeholders in the RTW process and their involvement in RTW for BC patients [47;51].

6.3 RTW support starting point 3: employers' needs

Many studies on RTW in BC patients suggest that employers should be more involved. As employers are of vital importance when RTW is at stake, they can clearly influence the success or failure of RTW for patients with chronic health problems [97;147;157-160]. Health care providers have concluded that employers should show more involvement when RTW issues arise [6;137;138;161].

Compared to the amount of research regarding patient and health care provider involvement in RTW, research with a specific focus on the role and problems of employers is scarce. Employers described their experienced with RTW of employees who survived BC as *'an intangible process which is difficult to manage*' [97](page 399). This experience was expressed in i) concern, referring to the employer's personal and emotional involvement, ii) uncertainty about the course of the illness and the guidance needed by the employee and iii) specific dilemmas in the RTW process. Dilemmas refer to questions such as: "when does one infringe on employee privacy?; should I pursue the employee's or the organisation's interest?; what is my personal versus my professional role?".

Tiedtke et al. concluded employers want to do their best to grasp the intangibility of the RTW process, but they feel insecure about what should be the best way do so [84;97]. Employers reported feeling suddenly confronted with short- to long-term sick leave due to a BC diagnosis. They have to take care of the sick leave paperwork and to ensure the continuation of the employee's work. They need more time in order to prepare reintegration, particularly when contact with the other stakeholders has been limited [84;97].

Although Belgian law does not yet require any employer–employee contact during sick leave, some employers in Tiedtke et al's research mentioned striving for optimal and open communication with their employee, to reduce the risk of a complicated RTW at a later stage. [84].

Focus group discussions with Swedish supervisors revealed they perceive themselves as being key persons, carrying the main responsibility for the rehabilitation of the sick-listed employees and for creating a good working environment [162]. Similar findings are reported by Jakobsen and Svendsen, indicating that for a positive reintegration process for employees with reduced function, Norwegian employers think the coordination of public services and assistance in RTW interventions by providers is essential [159].

7 MAIN OBJECTIVE

This thesis describes the development process of an health care based OT guided RTW intervention for Flemish BC patients who have paid work in Flanders, aiming to reduce time to RTW and thereby to maintain /enhance QoL. Sub-objectives are presented using a stepwise approach in order to reach the main objective, including specific research questions for each of the sub-objectives presented.

Based on research findings in combination with clinical practices, this thesis aims to meet the needs of BC patients, as well as the needs of other stakeholders directly involved in the RTW process (caregivers and employers) [28;163;164]. Each of the steps, for which the sub-objectives are hereby presented, is documented in the following chapters of this thesis:

Sub-objectives study 1:

The primary aim was to gather evidence on the effectiveness of OTIs in terms of RTW. A second aim was to select the most efficient RTW-focused OTI.

Sub-objectives of study 2:

In addition to the large body of knowledge on needs of (BC) patients regarding RTW and in line with the needs assessment of the IM protocol (e.g., step 1), this study aimed to investigate the expert opinions: 1) the current practices and opinions of occupational therapists involved in RTW at university rehabilitation centres in Belgium (FL), and 2) opinions of specialised caregivers involved in BC patients' health care, rehabilitation and social insurance. Though health care and social insurance are federal Belgian powers, issues on (return to) work are regulated on regional level. The focus of this study is put on regional level (Flanders) to maintain a well-defined legal and social context and to avoid complications due to language differences (in Flanders Dutch is spoken, the Walloon region uses French).

This allows for a RTW intervention to be developed that would fit in with caregivers and their patients' needs in their specific context. It also enables us to place these insights within the complexity of the context of this thesis (the bottlenecks and the complexity).

Sub-objective of study 3:

In line with step 3 of IM, the aim of this study was to develop a theoretical framework for an OTI in BC, by investigating how OT models may be used in BC patients' RTW interventions. This framework served as a theoretical foundation for the development of an OTI regarding RTW for BC patients.

Sub-objective of study 4:

This study's sub-objective was to describe both the development as well as the RTW intervention to be embedded in current care, bridging the gap between hospital and workplace. The IM protocol was used [126;127].

8 RESEARCH QUESTIONS

The research questions, which will be answered in this thesis, are structured in 2 main questions:

1. What is OT's role in supporting RTW for BC patients (in the Belgian social- and legislative context)?
2. What should be the specific content of and approach for an OTI guiding a RTW-trajectory for BC patients in Belgium (FL)?

To enable a more tailored approach, sub-questions are presented for studies which target specific aspects of this research project. Sub-questions are used to narrow the research into the direction needed to answer those main research questions.

1) What is OT's role in supporting RTW for BC patients (in the Belgian social- and legislative context)?

A systematic review (study 1) and an expert inquiry (study 2) were set up in order to provide answers to this question.

For study 1 the research questions were:

- What are the effects of OTIs in vocational RTW rehabilitation?
- What aspects of OT contribute to these effects?

Research questions for study 2 were:

- What is the experts' experience with OTIs for RTW?
- What is good practice regarding OTIs in RTW for BC patients according to the experts?

2) **What should be the specific content of and approach for an OTI guiding a RTW-trajectory for BC patients in Belgium?**

Using the results from the previous 2 studies, a conceptual practice model was developed (study 3) to provide a theoretical foundation for the intervention.

IM is used as a tool to finally create (study 4) the RTW intervention which OT might use when supporting RTW in BC patients.

The research questions used for study 3 were:

- Which OT models are available in the literature focusing on RTW?
- Which model(s) can be used as a theoretical framework when setting up an OTI in BC patients' RTW?
- When focusing on BC patients' RTW, what adaptations would be necessary to match the OT model(s) to this specific target group?

Study 4 consists of the development of the OT coordinated RTW, this part of the thesis describes the development process and intervention, for which IM protocol was used.

9 STUDY HYPOTHESES

This thesis presents the first phase of a research project which hypothesised that - during and after treatment for BC - a RTW-focused OTI embedded in multidisciplinary care could enhance the RTW rate and QoL. Preliminary research revealed that RTW contributes significantly to QoL for people at working age with chronical health care problems (e.g. breast cancer survivors). We assume (based on clinical practice and preliminary research) that MDT embedded OT can support/facilitate RTW [28;165].

In this thesis, it is therefore first hypothesised that an OTI focusing on RTW can potentially contribute to RTW and QoL of BC patients with paid work. Secondly, we hypothesize that the RTW intervention needs to be based on BC patients' needs and interests and needs of the primary stakeholders (direct social environment of the patient; health care workers; and employer).

10 OUTLINE OF THE THESIS

This thesis contains six chapters, starting with the general introduction (chapter 1). Chapter 2 provides the results of a systematic review on the effectiveness of OT in RTW programmes. In Chapter 3, the opinions of OT experts and other care providers with experience in RTW for BC patients in Belgium are presented. The conceptual practice model which will form the foundation for the RTW intervention, is described in Chapter 4. Additionally, Chapter 5 presents how the RTW intervention was developed stepwise. The manuscript ends with a general discussion (Chapter 6).

11 REFERENCE LIST

(1) Pauwels E, Van Hoof E, Charlier C, Lechner L, Bourdeaudhuij I. Transition into survivorship. A qualitative study of breast cancer survivors' and intimate partners' experiences of the post-treatment phase and preferences regarding on-line support. Ghent: Social Health Sciences, Ghent University & Psychological Sciences, Free University of Brussels; 2012.

(2) Tiedtke C, Knops L, Désiron H, Dierckx de Casterlé B, Donceel P, de Rijk A. Supporting Return-to-work in the face of legislation: Stakeholders' Experiences with Return-to-Work after Breast Cancer in Belgium. Journal of Occupational Rehabilitation 2011;22(2):241-51.

(3) Chow SL, Ting AS, Su TT. Development of Conceptual Framework to Understand Factors Associated with Return to Work among Cancer Survivors: A Systematic Review. Iranian Journal of Public Health 2014 Apr;43(4):391-405.

(4) de Boer AGEM, Taskila TK, Tamminga SJ, Feuerstein M, Frings-Dresen MHW, Verbeek JH. Interventions to enhance return-to-work for cancer patients. Cochrane Database of Systematic Reviews 2015;2015(9):1-76.

(5) Hoving JL, Broekhuizen ML, Frings-Dresen MH. Return to work of breast cancer survivors: a systematic review of intervention studies. BMC Cancer 2009;9:117.

(6) Islam T, Dahlui M, Majid H, Nahar A, Mohd Taib N, Su T, et al. Factors associated with return to work of breast cancer survivors: a systematic review. BMC Public Health 2014;14(Suppl 3):S8.

(7) Joanne P, Shubair M. Returning to Work After Breast cancer: A Critical Review. International Journal of Disability Management Research 2013;8(1).

(8) Park J, Shubair M. Returning to Work After Breast Cancer: A Critical Review. International Journal of Disability Management Research 2013;8:10.

(9) Dirven L, van de Poll-Franse L, Aaronson NK, Reijneveld JC. Controversies in defining cancer survivorship. The Lancet Oncology 2015 Jun;16(6):610-2.

(10) Belgian Cancer Registry. Cancer burden in Belgium. www kankerregister org 2015 [cited 2016 Jan 4];Available from: URL: http://www.kankerregister.org/default.aspx?PageId=659

(11) World Health Organisation W. Fact sheet N°297. www who int 2015 February 1 [cited 2015 Nov 5];Available from: URL: http://www.who.int/mediacentre/factsheets/fs297/en/

(12) Belgian Cancer Register. Incidence Fact Sheet Female Breast Cancer ICD10 : C50 Belgium 2012. www kankerregister org 2015 [cited 2015 Oct 28];Available from: URL: http://www.kankerregister.org/media/docs/Incidencefactsheets/Incidence_Fact_Sheet_FemaleBreastCancer_2012.pdf

(13) Belgian Cancer Registry. Cancer survival in Belgium (2004-2008). Brussels: Belgian Cancer Registry; 2012.

(14) Kankerregister België. Trends in incidentie borstkanker. www kankerregister org 2012 [cited 2013 Jan 7];Available from: URL: http://www.kankerregister.org/default.aspx?PageId=132

(15) Belgian Cancer Registry. Cancer incidence in Belgium in 2012. www kankerregister org 2014 [cited 2015 Dec 5];Available from: URL: http://www.kankerregister.org/default.aspx?url=Statistieken_tabellen_jaarbasis

(16) Renard F, Van Eycken L, Arbyn M. High burden of breast cancer in Belgium: recent trends in incidence (1999-2006) and historical trends in mortality (1954-2006). 2011. Report No.: 69.

(17) Ahn E. Impact of breast cancer diagnosis and treatment on work-related life and factors affecting them. Breast Cancer Res Treat 2009;116(3):609-16.

(18) Avis NE, Crawford S, Manuel J. psychosocial problems among younger women with breast cancer. psycho-oncology 2003 Jul 7;2004(13):295-308.

(19) Carlsen K. Self-reported work ability in long-term breast cancer survivors. A population-based questionnaire study in Denmark. Acta Oncol 2013;52(2):423-9.

(20) Fantoni SQ. Factors related to return to work by women with breast cancer in northern France. J Occup Rehabil 2010;20(1):49-58.

(21) Høyer M, Johansson B, Nordin K, Bergkvist L, Ahlgren J, Lidin-Lindqvist A, et al. Health-related quality of life among women with breast cancer - a population-based study. Acta Oncologica 2011 Oct 1;50(7):1015-26.

(22) Lilliehorn S, Hamberg K, Kero A, Salander P. Meaning of work and the returning process after breast cancer: a longitudinal study of 56 women. Scandinavian Journal of Caring Sciences 2013 Jun 1;27(2):267-74.

(23) Lundh MH. Health-related Quality of life and Return to work following breast cancer. Upsala: Uppsala University, Disciplinary Domain of Medicine and Pharmacy, Faculty of Medicine, Department of Public Health and Caring Sciences. Regional Cancer Centre, Uppsala University Hospital.; 2014.

(24) Mols F, Vingerhoets AJJM, Coebergh JW, van de Poll-Franse LV. Quality of life among breast cancer survivors: a systematic review. Eur J Cancer 2005 Oct 13;2005(41):2613-9.

(25) Pagani O. Survivorship - What Women Need After Breast Cancer. 2014 p. S43-S44.

(26) Salonen P, Kellokumpu-Lehtinen PL, Tarkka MT, Koivisto AM, Kaunonen M. Changes in quality of life in patients with breast cancer. Journal of Clinical Nursing 2011 Jan 1;20(1-2):255-66.

(27) Tiedtke C. Return to work experiences after breast cancer. Leuven: Leuven University Group Biomedical Sciences; Faculty of Medicine -Department of Public Health and Primary Care, Occupational, Environmental and Insurance Medicine; 2013.

(28) Désiron H, Knippenberg E, Willems B. Arbeidsre-integratie ten behoeve van arbeidsparticipatie en ervaren levenskwaliteit bij oncologische revalidanten (PWO project nr 2/dwo/Re05PO15). Hasselt: Provinciale Hogeschool Limburg, (D.O.P.); 2008 Aug 5.

(29) de Boer AGEM. Work ability and return-to-work in cancer patients. British Journal of Cancer 2008;98(8):1342-7.

(30) Donskaia LV, Demin EV, Chulkova VA, Artemkina NI, Shipovnikov NB. An experience with the rehabilitation of breast cancer patients after radical treatment. Vopr Onkol 1986;32(4):73-6.

(31) Kärki A, Simonen R, Mälkiä E, Selfe J. Impairments, activity limitations and participation restrictions 6 an 12 months after breast cancer operation. J Rehabil Med 2004 Aug 30;2005(37):180-8.

(32) National Institute for Health and Disability Insurance / department RDQ. Employed female breast cancer patients on sick leave longer than 1 year in Belgium. National Institute for Health and Disability Insurance / department RDQ 2016 May 20

(33) Wilford J, McMahon AD, Peters J, Pickvance S, Jackson A, Blank L, et al. Predicting job loss in those off sick. Occupational Medicine 2008 Mar 1;58(2):99-106.

(34) Mairiaux P, Schippers N, Kéfer F, Cornélis S, Donceel P, Somville P-R. Werkhervatting na een langdurige afwezigheid / Retour au travail après une absence de longue durée (HUT/P/MS-BB/PSY15/2): samenvatting van het onderzoeksrapport. Brussel: Federale Overheidsdienst Werkgelegenheid, Arbeid en Sociaal Overleg; 2012 May 25.

(35) Neyt M, Albrecht JA. The long-term evolution of QoL for disease-free breast cancer survivors : A comparative study in Belgium. Journal of psychosocial oncology 2006;24(3):89-123.

(36) Tamminga SJ. Enhancing return to work of cancer patients. Amsterdam: Faculty of Medicine of the University of Amsterdam (UvA); 2012.

(37) Rick O, Kalusche EM, Dauelsberg T, König V, Korsukéwitz C, Seifart U. Reintegrating Cancer Patients Into the Workplace. Deutsches Arzteblad International 2012 Oct 19;109(42):702-8.

(38) Pauwels EEJ, Charlier C, De Bourdeauhuij I, Lechner L, Van Hoof E. Care needs after primary breast cancer treatment. Survivors' associated sociodemographic and medical characteristics. psycho-oncology 2011 Aug 17;22(1):125-32.

(39) Mehnert A. Employment and work-related issues in cancer survivors. Crit Rev Oncol Hematol 2011;77(2):109-30.

(40) Paalman CH, van Leeuwen FE, Aaronson NK, de Boer AGEM, Poll-Franse L, Oldenburg HSA, et al. Employment and social benefits up to 10 years after breast cancer diagnosis: a population-based study. Br J Cancer 2016 Jan 12;114(1):81-7.

(41) Benson JR, Jatoi I. The global breast cancer burden. Future Oncology 2012 Jun;8(6):697-702.

(42) Johnsson A. Work status and life changes in the first year after breast cancer diagnosis. Work: A Journal of Prevention, Assessment & Rehabilitation 2011;38(4):337-46.

(43) American Cancer Society. Cancer Treatment & Survivorship Facts & Figures 2014-2015. http://www cancer org 2014 [cited 2015 Dec 15];Available from: URL: http://www.cancer.org/acs/groups/content/@research/documents/document/acspc-042801.pdf

(44) Tiedtke C, Dierckx de Casterlé B, de Rijk A, Christiaens MR, Donceel P. Breast cancer treatment and work disability: patient perspectives. Breast 2011;20(6):534-8.

(45) Dubois M. Causes and prevention of long term disability due to low back problems: an inquiry from the perspective of insurance medicine Biomedical Sciences Group Faculty of Medicine Department of Public Health and Primary Care Occupational, Environmental and Insurance Medicine; 2014.

(46) Rasmussen DM, Elverdam B. The meaning of work and working life after cancer: an interview study. psycho-oncology 2008 Dec 1;17(12):1232-8.

(47) Wells M, Williams B, Firnigl D, Lang H, Coyle J, Kroll T, et al. Supporting "work-related goals" rather than "return to work" after cancer? A systematic review and meta-synthesis of 25 qualitative studies. psycho-oncology 2013 Jun 1;22(6):1208-19.

(48) Maytal G, Peteet J. The Meaning of Work. Work and Cancer Survivors. Springer New York; 2009. p. 105-19.

(49) Varekamp I, Verbeek JH, van Dijk FJ. How can we help employees with chronic diseases to stay at work? A review of interventions aimed at job retention and based on an empowerment perspective. Int Arch Occup Environ Health 2006;80(2):87-97.

(50) Loisel P, Anema JR, Feuerstein M, Pransky G, MacEachen E, Costa-Black KM. Preface. In: Loisel P, Anema JR, editors. Handbook of Work Disability Prevention and Management.New York: Springer; 2013. p. ix-xiii.

(51) Stergiou-Kita M, Grigorovich A, Tseung V, Milosevic E, Hebert D, Phan S, et al. Qualitative meta-synthesis of survivors' work experiences and the development of strategies to facilitate return to work. J Cancer Surviv 2014;8(4):657-70.

(52) Timperi AW, Ergas IJ, Rehkopf DH, Roh JM, Kwan ML, Kushi LH. Employment status and quality of life in recently diagnosed breast cancer survivors. psycho-oncology 2013 Jun 1;22(6):1411-20.

(53) Lundh MH, Lampic C, Nordin K, Ahlgren J, Bergkvist L, Lambe M, et al. Changes in health-related quality of life by occupational status among women diagnosed with breast cancer: a population-based cohort study. psycho-oncology 2013 Oct 1;22(10):2321-31.

(54) Høyer M, Nordin K, Ahlgren J, Bergkvist L, Lambe M, Johansson B, et al. Change in Working Time in a Population-Based Cohort of Patients With Breast Cancer. journal of clinical oncology 2012 Aug 10;30(23):2853-60.

(55) Raque-Bogdan TL, Hoffman TLM, Ginter AC, PIontkwski S, Schexnayder K, White R. The Work Life and Career Development of Young Breast Cancer Survivors. Journal of Counseling Psychology 2015;62(4):655-69.

(56) Tiedtke C. Survived but feeling vulnerable and insecure: a qualitative study of the mental preparation for RTW after breast cancer treatment. BMC Public Health 2012;12:538.

(57) Stergiou-Kita M, Pritlove C, Holness DL, Kirsh B, Eerd D, Duncan A, et al. Am I ready to return to work? Assisting cancer survivors to determine work readiness. Journal of Cancer Survivorship 2016;1-12.

(58) Mackenzie CR. It is hard for mums to put themselves first: How mothers diagnosed with breast cancer manage the sociological boundaries between paid work, family and caring for the self. Social Science & medicine 2014 Sep;117:96-106.

(59) Tiedtke C, Dierckx de Casterlé B, Donelly M, de Rijk A. Workplace support after breast cancer treatment: recognition of vulnerability. Disabil Rehabil, 2015;37(19):1770-6.

(60) Désiron HAM, Biesmans K, Reyskens A. Ergotherapeutische Methodiek in Oncologische Revalidatie (EMIOR). 2012. Report No.: ESF project nr 2144.

(61) Neary D. Epidemiology. In: Feuerstein M, editor. Work and Cancer Survivorship.New York: Springer; 2009. p. 3-24.

(62) Tompa E. Measuring the burden of work disability: a review of methods, measurement issues and evidence. In: Loisel P, Anema JR, editors. Handbook of Work Disability: Prevention and Management.Toronto: Springer; 2013. p. 43-58.

(63) Johnsson A. Factors influencing return to work: a narrative study of women treated for breast cancer. Eur J Cancer Care (Engl) 2010;19(3):317-23.

(64) Tamminga S, de Boer A, Verbeek J, Taskila T, Frings-Dresen M. Enhancing return-to-work in cancer patients, development of an intervention and design of a randomised controlled trial. BMC Cancer 2010;10(1):345.

(65) Haglund L, Henriksson C. Concepts in occupational therapy in relation to the ICF. Occup Ther Int 2003;10(4):253-68.

(66) World Health Organisation. International Classification of Functioning, Disability and Health (ICF). www who int 2001Available from: URL: http://www.who.int/classifications/icf/en/

(67) World Health Organization. Towards a Common Language for Functioning, Disability and Health ICF. www who int 2002 [cited 2014 Aug 26];Available from: URL: http://www.who.int/classifications/icf/training/icfbeginnersguide.pdf

(68) Brage S. Development of ICF core set for disability evaluation in social security. Disability & Rehabilitation 2008;30(18):1392-6.

(69) Escorpizo R, Reneman MF, Ekholm J, Fritz J, Krupa T, Marnetoft SU, et al. A Conceptual Definition of Vocational Rehabilitation Based on the ICF: Building a Shared Global Model. J Occup Rehabil 2011;21(2):126-33.

(70) Finger ME, Glässel A, Erhart P, Gradinger F, Klipstein A, Rivier G, et al. Identification of Relevant ICF Categories in Vocational Rehabilitation: A Cross Sectional Study Evaluating the Clinical Perspective. J Occup Rehabil 2011;21(2):156-66.

(71) Harty M, Griesel M, van der Merwe A. The ICF as a common language for rehabilitation goal-setting: comparing client and professional priorities. Health Qual Life Outcomes 2011 Oct 7;9:87.

(72) Leyshon RT, Shaw LE. Using the ICF as a conceptual framework to guide ergonomic intervention in occupational rehabilitation... International Classification of Functioning, Disability, and Health. work 2008 Mar 14;31(1):47-61.

(73) Steiner WA, Ryser L, Huber E, Uebelhart DAA, Stucki G. Use of the ICF Model as a clinical problem solving tool in physical therapy and rehabilitation medicine. Physical Therapy 2002 Nov;82(11):1098-107.

(74) Young AE, Roessler RT, Wasiak R, McPherson KM, van Poppel MN, Anema JR. A developmental conceptualization of return to work. Journal of Occupational Rehabilitation 2005;15:557-68.

(75) Wasiak R, Young AE, Roessler RT, McPherson KM, van Poppel MN, Anema JR. Measuring return to work. Journal of Occupational Rehabilitation 2007;17:766-81.

(76) Stapelfeldt CM, Labriola M, Jensen AB, Andersen NT, Momsen AM, Nielsen CV. Municipal return to work management in cancer survivors undergoing cancer treatment: a protocol on a controlled intervention study. BMC Public Health 2015 Jul 29;15:720.

(77) de Rijk A, Janssen N, Alexanderson K, Nijhuis FJN. Gender differences in return to work patterns among sickness absentees and their associations with health: a prospective cohort study in The Netherlands. International Journal of Rehabilitation Research 2008;(31):327-36.

(78) Nieuwenhuijsen K, Noordik E, van Dijk FJ, van der Klink JJ. Return to Work Perceptions and Actual Return to Work in Workers with Common Mental Disorders. J Occup Rehabil 2013;23(2):290-9.

(79) Aaronson NK, Mattioli V, Minton O, Weis J, Johansen C, Dalton SO, et al. Beyond treatment - Psychosocial and behavioural issues in cancer survivorship research and practice. EJC Supplements 2014 May 29;12(1):54-64.

(80) Parsons JA, Eakin JM, Bell RS, Franche RL, Davis AM. "So, are you back to work yet?": Re-conceptualizing 'work' and 'return to work' in the context of primary bone cancer. Social Science & medicine 2008 Dec;67(11):1826-36.

(81) Yarker J, Munir F, Bains M, Kalawsky K, Haslam C. The role of communication and support in return to work following cancer-related absence. psycho-oncology 2010 Oct 1;19(10):1078-85.

(82) Harder HG, Scott LR. Return to work. In: Harder HG, Scott LR, editors. Comprehensive Disability Management.Edinburgh, London, New York, Oxford, Philadelphia, St Louis, Sydeny, Toronto: Elsevier, Churchill Livingstone; 2005. p. 115-25.

(83) Taskila T, Lindbohm ML, Lehto US, Hakanen J, Hietanen P. Cancer survivors' received and needed social support from their work place and the occupational health services. support care cancer 2005.

(84) Tiedtke C. Supporting return-to-work in the face of legislation: stakeholders' experiences with return-to-work after breast cancer in Belgium. J Occup Rehabil 2012;22(2):241-51.

(85) Loisel P, Buchbinder R, Hazard R, Keller R, Scheel I, van Tulder M, et al. Prevention of Work Disability Due to Musculoskeletal Disorders: The Challenge of Implementing Evidence. J Occup Rehabil 2005;15(4):507-24.

(86) World Health Organization (WHO). World report on Disability / Chapter 2: Disability : a global picture. www who int 2015 [cited 2015 Nov 2];Available from: URL: http://www.who.int/disabilities/world_report/2011/chapter2.pdf

(87) Mak AKY, Chaidaroon S, Fan G, Thalib F. Unintended consequences: the social context of cancer survivors and work. Journal of Cancer Survivorship 2014;8(2):269-81.

(88) Varekamp I, van Dijk FJH, Kroll LE. Workers with a chronic disease and work disability. Bundesgesundheitsbl 2013;56(3):406-14.

(89) Varekamp I, Haafkens JA, Detaille SI, Tak PP, van Dijk FJH. Preventing work disability among employees with rheumatoid arthritis: What medical professionals can learn from the patients' perspective. Arthritis Care & Research 2005 Dec 15;53(6):965-72.

(90) Maiwald K. Does bipartite return-to-work policy work? An evaluation based on stakeholders' experiences in a Canadian healthcare setting Maastricht University; 2014.

(91) Knaeps J. Vocational Rehabilitation, People with mental health problems, Vocational Rehabilitation counselors, Mental Health practioners Biomedical Sciences group, Faculty of Medicine, Departement of public Health, LUCAS - Center for Care Research & Consultancy KULeuven; 2015.

(92) Tiedtke C, de Rijk A, Donceel P, Christiaens MR, Dierckx de Casterlé B. Survived but feeling vulnerable and insecure: a qualitative study of the mental preparation for RTW after breast cancer treatment. BMC Public Health 2012 Jul 23;2012(12):538.

(93) Bains M, Yarker J, Amir Z, Wynn P, Munir F. Helping cancer survivors return to work: what providers tell us about the challenges in assisting cancer patients with work questions. Journal of Occupational Rehabilitation 2011;22(1):71-7.

(94) Feuerstein M. Recommendations for the U.S. National Occupational Research Agenda: research on cancer survivorship and musculoskeletal disorders and work disability. J Occup Rehabil 2006;16(1):1-5.

(95) Johnsson A. Predictors of return to work ten months after primary breast cancer surgery. Acta Oncol 2009;48(1):93-8.

(96) Nilsson M. Return to work after breast cancer: women's experiences of encounters with different stakeholders. Eur J Oncol Nurs 2011;15(3):267-74.

(97) Tiedtke C, Donelly M, de Rijk A, Dierckx de CB. Return to work following breast cancer treatment: the employers' side. Journal of Occupational Rehabilitation 2014;24(3):399-409.

(98) Nilsson MI, Peterson L-M, Wennman-Larsen A, Olsson M, Vaez M, Alexanderson K. Adjustment and social support at work early after breast cancer surgery an its associations with sickness absence. psycho-oncology 2013;2013(22):2755-62.

(99) Shewbridge A, Wisemann T, R, hardson JL. Working while receiving chemotherapy: a survey of patients' experiences and factors that influence these. Eur J Cancer Care (Engl) 2012 Jan 1;21(1):117-23.

(100) Tiedtke C, de Rijk A, Dierckx dC, Christiaens MR, Donceel P. Experiences and concerns about 'returning to work' for women breast cancer survivors: a literature review. psycho-oncology 2009 Oct 12;2010(19):677-83.

(101) World Federation of Occupational Therapists. Definition of occupation. 2016. 25-5-2016. Ref Type: Online Source

(102) Cole MB, Tufano R. Applied theories in Occupational Therapy. A practical approach. Tjorofare: Slack Incorporated; 2008.

(103) Morrison TL, Thomas RL. Survivors' experiences of return to work following cancer: A photovoice study: Expériences vécues par des survivantes á un cancer face á leur retour au travail : Une étude photovoice. Canadian Journal of Occupational Therapy 2014 Jun 1;81(3):163-72.

(104) World Federation of Occupational Therapists. Aims of Occupational Therapy.

http://www.wfot.org/Portals/0/PDF/STATEMENT%20ON%20OCCUPATIONAL%20THERAPY%20300811 pdf 2011 [cited 2014 Oct 5];(World Federation of Occupational Therapists)Available from: URL:http://www.wfot.org/Portals/0/PDF/STATEMENT%20ON%20OCCUPATIONAL%20THERAPY%20300811.pdf

(105) Opleiding ergotherapie PXL. Studiegids ACJA 1516 PXL opleiding ergotherapie. 1-4-2015. 26-6-2016.
Ref Type: Online Source

(106) World Federation of Occupational Therapy (WFOT). Education and research in Occupational Therapy. www wfot org 2015 December 14 [cited 2016 Jan 3];Available from: URL: http://www.wfot.org/Education/EducationandResearch.aspx

(107) van de Velde D. Competenties en leerresultaten voor de professionele bachelor in de ergotherapie. Antwerpen: Standaard Professional/ WPG; 2012.

(108) Sociaal Economische Raad Vlaanderen (SERV). Competentfiche "ergotherapie" (Validatiedatum: 30-6-14). 2016 May 19.

(109) World Federation of Occupational Therapists. Aims of Occupational Therapy. http://www wfot org 2011 [cited 2014 Oct 5];(World Federation of Occupational Therapists)Available from: URL: http://www.wfot.org/Portals/0/PDF/STATEMENT%20ON%20OCCUPATIONAL%20THERAPY%20300811.pdf

(110) RUGent. Master ergotherapie Vlaanderen. https://oasis ugent be/studiekiezer-web/nl/afstudeerrichting/DMERGW 2016 February 18 [cited 2016 May 26];Available from: URL: https://oasis.ugent.be/studiekiezer-web/nl/afstudeerrichting/DMERGW

(111) Wright M. Early return to work & occupational therapy. OT Practice (OT PRACT) 1997 May;2(5):36-42.

(112) Paquette S. Research Trends in Work Disability Prevention. Work and Industry Special Interest Section Quarterly / American Occupational Therapy Association 2015 Jun;29(2):1-4.

(113) Stamm TA, Cieza A, Machold K, Smolen JS, Stucki G. Exploration of the link between conceptual occupational therapy models and the International Classification of Functioning, Disability and Health. Australian Occupational Therapy Journal 2005 Jun 16;2006(53):9-17.

(114) McColl MA. Introduction: A basis for theory in occupational therapy. In: McColl MA, Law M, Stewart D, Boubt L, Ploock N, Krupa T, editors. Theoretical basis of occupational therapy. second edition ed. Thorofare: Slack Incorporated; 2003. p. 1-10.

(115) Kinébanian A, Le Granze M. Grondslagen van de ergotherapie. Elsevier; 2006.

(116) Cole MB, Tufano R. Applied theories in occupational Therapy. A practical approach. Tjorofare: Slack Incorporated; 2008.

(117) Knott V, Zrim S, Shanahan EM, Anastassiadis P, Lawn S, Kichenadasse G, et al. Returning to work following curative chemotherapy: a qualitative study of return to work barriers and preferences for intervention. support care cancer 2014;22(12):3263-73.

(118) Shaw W, Hong QN, Pransky G, Loisel P. A Literature Review Describing the Role of Return-to-Work Coordinators in Trial Programs and Interventions Designed to Prevent Workplace Disability. J Occup Rehabil 2008;18(1):2-15.

(119) Meriano C, Latella D. Introduction. In: Meriano C, Latella D, editors. Occupational Therapy Interventions Function and Occupations.Thorofare: SLACK Incorporated; 2008. p. 1-34.

(120) Cook C, Lukersmith S. Work rehabilitation. In: Curtin M, Molineux M, Supyk-Mellson J, editors. Occupational therapy and physical dysfunction Enabling Occupation. 6 ed. Edingburgh: Churchill Livingstone Elsevier; 2010. p. 391-408.

(121) Rice VJ. Restoring competence for the worker role. In: Vining Radomski MV, Trombly Latham CA, editors. Occupational Therapy for Physical Dysfunction. Seventh ed. Philadelphia: Wolters Kluwer Health / Lippincott Williams & Wilkins; 2014. p. 871-908.

(122) Sanders MMA, Wright R. Work. In: Meriano C, Latella D, editors. Occupational therapy interventions. Function and occupations.Thorofare: Slack Incorporated; 2008. p. 331-61.

(123) Munir F, Kalawsky KEA, Wallis DJ, Donaldson-Feilder E. Using intervention mapping to develop a work-related guidance tool for those affected by cancer. BMC Public Health 2013;13(6).

(124) van Oostrom SH, Anema JR, Terluin B, Venema A, de Vet HC, van Mechelen W. Development of a workplace intervention for sick-listed employees with stress-related mental disorders: Intervention Mapping as a useful tool. BMC Health Serv Res 2007;15(7):127.

(125) Bartholomew LK, Parcel GS, Kok GJ. Intervention mapping: a process for developing theory- and evidence-based health education programs. Health Educ Behav 1998;25:545-63.

(126) Bartholomew LK, Parcel GS, Kok GJ, Gottlieb NH. Intervention Mapping: designing theory and evidence-based health promotion programs. 1 ed. Mountain View, California: Mayfield Publishing Company; 2001.

(127) Bartholomew LK, Parcel GS, Kok G, Gottlieb NH. Planning health promotion programs: an Intervention Mappping approach. San Francisco, CA: Jossey-Bass; 2006.

(128) Brendryen H, Johansen A, Nesvag S, Kok G, Duckert F. Constructing a Theory- and Evidence-Based Treatment Rationale for Complex eHealth Interventions: Development of an Online Alcohol Intervention Using an Intervention Mapping Approach. JMIR Res Protoc 2013;2(1):e6.

(129) Detaille S, van der Gulden J, Engels J, Heerkens Y, van Dijk F. Using intervention mapping (IM) to develop a self-management programme for employees with a chronic disease in the Netherlands. BMC Public Health 2010;10(1):353.

(130) Vermeulen SJ, Anema JR, Schellart AJ, van Mechelen W, van der Beek AJ. Intervention mapping for development of a participatory return-to-work intervention for temporary agency workers and unemployed workers sick-listed due to musculoskeletal disorders. BMC Public Health 2009;l 2(9):216.

(131) Ammendolia C, Cassidy D, Steensta I, Soklaridis S, Boyle E, Eng S, et al. Designing a workplace return-to-work program for occupational low back pain: an intervention mapping approach. BMC Musculoskelet Disord 2009;10:65.

(132) Fernandez ME, Gonzales A, Tortolero-Luna G, Partida S, Bartholomew LK. Using intervention mapping to develop a breast and cervical cancer screening program for Hispanic farmworkers: Cultivando La Salud. Health Promotion Practice 2005;6.

(133) Kok G, Schaalma H, Ruiter RA, van Empelen P, Brug J. Intervention mapping: protocol for applying health psychology theory to prevention programmes. J Health Psychol 2004;9:85-98.

(134) Kwak L, Kremers SP, Werkman A, Visscher TL, Baak MA, Brug J. The NHF-NRG In Balance-project: the application of Intervention Mapping in the development, implementation and evaluation of weight gain prevention at the worksite. Obesity Reviews 2007;8.

(135) McEachan RRC, Lawton RJ, Jackson C, Conner M, Lunt J. Evidence, Theory and Context: Using intervention mapping to develop a worksite physical activity intervention. BMC Public Health 2008;8(1):1-12.

(136) Vonk Noordegraaf A, Huirne JAF, Pittens C, van Mechelen W, Broerse JEW, Brölmann HAM, et al. eHealth program to empower patients in returning to normal activities and work after gynecologival surgery: intervention mapping as a useful method for development. Journal of Medical Internet Research 2012;14(5 / e124).

(137) Clark JC, Landis LL. Reintegration and maintenance of employees with breast cancer in the workplace. AAOHN J 1989 May;37(5):186-93.

(138) Nilsson M, Olsson M, Wennman-Larsen A, Petersson LM, Alexanderson K. Return to work after breast cancer: Womens experiences of encounters with different stakeholders. european journal of oncology nursing 2011 Jul;15(3):267-74.

(139) Pauwels E. Needs for information and support of breast cancer survivors and intimate partners during the transition into survivorship Ghent University, Social Health Science / Free Universtity of Brussels, Psychological Science; 2012.

(140) de Nazelle S. Returning to work after cancer. Revue du Practicien 2006;56(18):2037-9.

(141) Rommel W, Neefs H, Verhaegen H, Desplenter B. Werken na kanker: welke problemen ervaren (ex-)patiënten die het werk hervatten? (Working beyond cancer: what problems do (ex-)patients experience when wanting to get back to work?). Vlaamse Liga tegen Kanker; 2012. Report No.: September 2012.

(142) Kennedy F, Haslam C, Munir F, Pryce J. Returning to work following cancer: a qualitative exploratory study into the experience of returning to work following cancer. Eur J Cancer Care (Engl) 2007;16:17-25.

(143) Hinman MR. Factors influencing work disability for women who have undergone mastectomy. Women & Health 2001;34(2):45-60.

(144) Spelten ER, Sprangers MA, Verbeek JH. Factors reported to influence the return to work of cancer survivors: a literature review. psycho-oncology 2002 Mar;11(2):124-31.

(145) Kenyon M, Mayer DK, Owens AK. Late and Long-Term Effects of Breast Cancer Treatment and Surveillance Management for the General Practitioner. Journal of Obstetric, Gynecologic, & Neonatal Nursing 2014 May 1;43(3):382-98.

(146) Godderis L, Désiron H, Verjans M, Lambreghts C, Mylle G, Vandenbroeck S. Effective rehabilitation and return to work requires an personalized multidisciplinary approach with interventions at work. 2015.

(147) Clayton S, Barr B, Nylen L, Burstrôm B, Thielen K, Diderichsen F, et al. Effectiveness of return-to-work interventions for disabled people: a systematic review of government initiatives focused on changing the behaviour of employers. The European Journal of Public Health 2012 Jun 1;22(3):434-9.

(148) Hoefsmit N, Houkes I, Nijhuis FJN. Intervention characteristics that facilitate return to work after sickness absence: a systematic literature review. Journal of Occupational Rehabilitation 2012 Dec 31;22(4):462-77.

(149) Maiwald K, Meershoek AM, de Rijk AE, Nijhuis FJN. How policy on employee involvement in work reintegration can yield its opposite: employee experiences in a Canadian setting. Disabil Rehabil 2013;35(7):527-37.

(150) Mehnert A, de Boer A, Feuerstein M. Employment challenges for cancer survivors. Cancer 2013 Jun 1;119:2151-9.

(151) de Boer AGEM, van Zanten-Przybysz I, Maes LM, Frings-Dresen MH. Return to work after treatment for cancer: experiences of patients and supervisors [in Dutch: Terugkeer naar werk na behandeling van kanker: ervaringen van patienten en leidinggevenden]. TBV- Tijdschrift voor bedrijfs- en verzekeringsgeneeskunde 2008;16:292-7.

(152) Abdulrahman GO. The effect of multidisciplinary team care on cancer management. Pan Afr Med J 2011 Jun 17;9:20.

(153) Gardner BT, Pransky G, Shaw WS, Nha Hong Q, Loisel P. Researcher perspectives on competencies of return-to-work coordinators. Disabil Rehabil 2010 Jan 1;32(1):72-8.

(154) Anema JR, Steenstra IA, Urlings IJ, Bongers PM, De Vroome EM, van Mechelen W. Participatory ergonomics as a return-to-work intervention: a future challenge? Am J Ind Med 2003;44:273-81.

(155) Bernacki EJ. A facilitated early return to work program at a large urban medical center. J Occup Environ Med 2000;42(12):1172-7.

(156) Loisel P, Gosselin L, Durand P, Lemaire J, Poitras S, Abenhaim L. Implementation of a participatory ergonomics program in the rehabilitation of workers suffering from subacute back pain. Appl Ergon 2001;32:53-60.

(157) Gard G. Focus on motivation in the work rehabilitation planning process: a qualitative study from the employer's perspective. Journal of Occupational Rehabilitation 2003 Sep 13;13(3):159-67.

(158) Huang Y. Factors affecting the organizational responses of employers to workers with injuries. Work: A Journal of Prevention, Assessment & Rehabilitation 2006;26(1):75-84.

(159) Jakobsen K, Svendsen E. Employers' perspective: when a return to work is the objective for persons with reduced mobility. Work: A Journal of Prevention, Assessment & Rehabilitation 2013 Dec 31;44(2):145-53.

(160) Franche RL, Baril R, Shaw W, Nicholas M, Loisel P. Workplace-Based Return-to-Work Interventions: Optimizing the Role of Stakeholders in Implementation and Research. J Occup Rehabil 2005;15(4):525-42.

(161) Maunsell E, Brisson C, Dubois L, Lauzier S, Fraser A. Work problems after breast cancer: an exploratory qualitative study. Psycho-oncology 1999 Nov;8(6):467-73.

(162) Holmgren K. Supervisors' views on employer responsibility in the return to work process. A focus group study. J Occup Rehabil 2007;17(1):93-106.

(163) Désiron HAM, Knippenberg E, Willems B, Neerinckx E. Occupational therapy for breast cancer survivors: improving quality of life by return-to-work assistance. Journal of Rehabilitation Medicine 2008 Jun;135-6.

(164) Désiron HAM, Willems B, Op't Eijnde B, Claes G. arbeidsparticipatie van ex-kankerpatiënten: verkennende literatuurstudie over de inbreng van ergotherapie bij ondersteuning van herstel van (arbeids)participatie voor ex-kankerpatiënten. acta ergotherapeutica Belgica 2009;3:26-35.

(165) Désiron HAM, Biesmans K, Reyskens A. Ergotherapeutische Methodiek in Oncologische Revalidatie (EMIOR) / (Occupational Therapy approach for (labour-)re-Integration in Oncology Rehabilitation). http://esf-agentschap.be/nl/projectenkaart/emior-ii; 2012. Report No.: ESF project nr 2144.

CHAPTER 2 : OCCUPATIONAL THERAPY AND RETURN TO WORK: A SYSTEMATIC LITERATURE REVIEW

Huguette A M Désiron, Angelique de Rijk, Elke Van Hoof, Peter Donceel

BMC Public Health 2011; (11):615.

1 ABSTRACT

Background

The primary aim of this review study was to gather evidence on the effectiveness in terms of return to work (RTW) of occupational therapy interventions (OTIs) in rehabilitation patients with non-congenital disorders. A secondary aim was to be able to select the most efficient OTI.

Methods

A systematic literature review of peer-reviewed papers was conducted using electronic databases (Cinahl, Cochrane Library, Ebsco, Medline (Pubmed), and PsycInfo). The search focussed on randomised controlled trials and cohort studies published in English from 1980 until September 2010. Scientific validity of the studies was assessed.

Results

Starting from 1532 papers with pertinent titles, six studies met the quality criteria. Results show systematic reviewing of OTIs on RTW was challenging due to varying populations, different outcome measures, and poor descriptions of methodology. There is evidence that OTIs as part of rehabilitation programs, increase RTW rates, although the methodological evidence of most studies is weak.

Conclusions

Analysis of the selected papers indicated that OTIs positively influence RTW; two studies described precisely what the content of their OTI was. In order to identify the added value of OTIs on RTW, studies with well-defined OT intervention protocols are necessary.

2 BACKGROUND

Restoring the ability to work is a key element in the rehabilitation of adult patients (aged 16-65 years). The primary goal of occupational therapy (OT), as part of the rehabilitation program, is to enable people to participate in the activities of everyday life including the ability to work. Occupational therapists achieve this outcome by working with people and communities to enhance their ability to engage in the "occupations' (used in terms of activities, and not only referring to employment) they want to, need to, or are expected to do. OT can involve, in order to reach the therapeutic goals, modifying the occupation itself or the environment [1]. According to the World Federation of Occupational Therapists (WFOT), the aims of Occupational Therapy (OT) are *"… to promote, develop, restore and maintain abilities needed to cope with daily activities to prevent dysfunction. Programs are designed to facilitate maximum use of function to meet demands of the person's working, social, personal and domestic environment… "* [1].

Assisting patients to return to their job is clearly an important part of the therapeutic effort of occupational therapists [2], the OT process is based on initial and repeated assessments in individual patients. Assessment includes the use of standardized procedures, interviews, observations in a variety of settings and consultation with significant people in the person's life. Functionality, the ability to perform activities in daily life, leisure and work and the possibility to participate in all aspects of life (including work) are part of the OT assessments. The results of these recurrent assessments form the basis of the therapeutic program plan, with inclusion of both short- and long-term aims of treatment. This plan must be relevant to the person's developmental stage, habits, roles, life-style preferences and the person's environment.

OT interventions, being part of the therapeutic plan, are designed to facilitate performance of everyday tasks and adaptation of settings in which the person works, lives and socializes. Interventions are directed towards developing, improving, and restoring daily living skills, work readiness, work performance, play skills, leisure capacities and enhancing educational performance skills (objectives) [3]. Re-assessments in different phases of the rehabilitation process are used to check results, and (re-) direct therapeutic goals.

Following Holmes [4], rehabilitation must focus on identifying and overcoming the health, personal/psychological, and social/occupational obstacles to recovery and (return to) work from this point of view, vocational rehabilitation reflects a wide variety of interventions, including meaningful occupations through voluntary work, sheltered work, supported employment and open employment opportunities. As a therapeutic intervention, return to work includes also patients who are assisted by their (occupational) therapists to regain access to the (premorbid) type of work.

From that point of view, vocational rehabilitation is one of the methods that can be put to use by OT on behalf of reaching the patients goals when RTW and/or regaining productivity (in a more large meaning) is at stake. In practice, vocational rehabilitation is realized through a partnership between the patient and all the rehab-team members, including OT. Especially for patients who suffer from symptoms that not only endanger their (labour-) participation while the rehabilitation process is on-going, but who risk being disabled on longer terms (because of permanent limitation of chronic problems), OT is assumed to be a relevant part of the whole rehabilitation program [5].

Since no evidence was found on behalf of breast-cancer survivors (specific population in which the researchers at first took interest), it was decided to enlarge the focus on RTW and OT for all patients confronted with long term effects of diagnose/treatment, including problems on RTW.

In the lecture of Whyte [6], held at the 57th John Stanley Coulter memorial lecture, the author stated that much discussion has been going on, on the need to enhance evidence base supporting rehabilitation practice. Within the professional group of occupational therapists, both researchers and practitioners indicate that – like Whyte points out in the conclusions of his lecture- they need to acknowledge that empirical work alone will not develop the science of rehabilitation. Therefore, attempting to add to the work that Whyte, Lee and others advocate, this review centralizes current evidence with regard to the added value of OT for patients aiming at return to work, regardless of the categories of patients to who this intervention was provided (RTW).

For different groups of patients, the importance of RTW is increasing both for personal and societal reasons [7]. Early RTW programs represent a bridge towards employment for an injured worker. Wright argued that OT practitioners are ideally suited to guide that transition [8]. Evolution in the medical treatment of different pathologies (e.g. cancer, AIDS) initiated evolutions in rehabilitation programs offered to patients. As part of the multidisciplinary rehabilitation effort, OT focuses on restoring activity and participation (including labour participation). Restoring and/or maintaining activities and participation of clients in different dimensions of life (self-maintenance, productivity and leisure) [9] is the main goal for occupational therapy interventions (OTIs). Occupational therapists should deliver evidence-based services in order to ensure quality in the input of OT within the whole rehabilitation program. Evidence supporting the effectiveness of OTIs in terms of RTW is particularly useful, as it can be used to develop specific programs targeting RTW.

Primary goal of this review was to assess the effect of OTIs on RTW and if effects are found, to describe what OT aspects contribute to the effects. Secondary aim was to select the most efficient OTI for an intervention to promote RTW. Subsequently, this review focussed on the following questions:
What are the effects of OTIs in vocational rehabilitation on RTW?
What aspects of OT contribute to these effects?

Evidence-based information not only will stimulate professionals in rehabilitation teams to optimize the quality of services these professionals provide (and more specifically the work of occupational therapists). It will also support the quality of patient outcomes in terms of preventing loss of income, decreasing the number of sick-leave days, and increasing quality of life [10].

3 METHODS

Five electronic databases (Cinahl, Cochrane Library, Ebsco, Medline (Pubmed), and PsycInfo) were used to search for pertinent articles published between 1980 and September 2010. The patient population/problem (P), intervention (I), comparison (C), and outcome (O), or PICO technique, was used to find relevant information and to formulate relevant questions that best match the capabilities of database search engines. Using the PICO elements as guideline, focus of this review could be rigorously maintained on patients suffering from an injury or illness that causes temporary incapacity to work and on patients participating in rehabilitation programs including OT.

3.1 Identification of studies

Figure 1 shows the selection process of articles for full-text analysis (n=26). Inclusion criteria were:

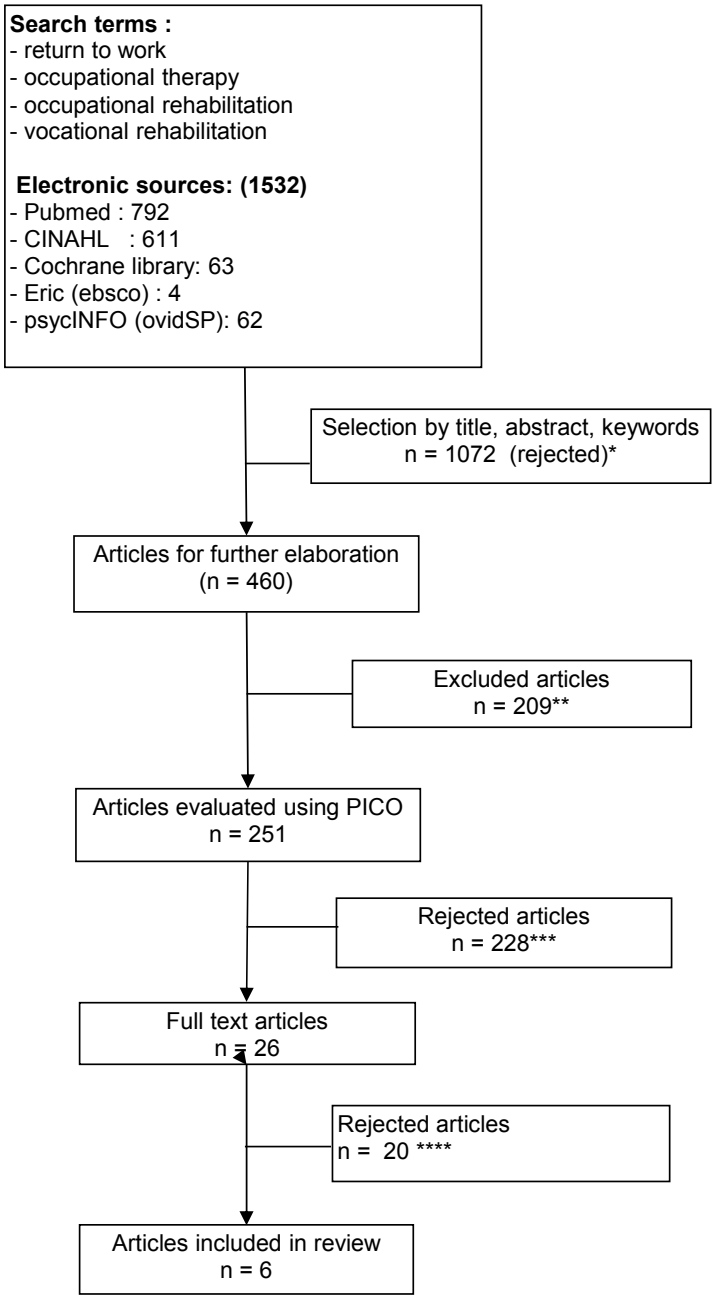
- The studies had to be either randomised controlled trials (RCTs) or cohort studies and written in English;
- The participants had to be patients of working age (18-65 years) that had participated in a rehabilitation program;
- The OTI had to be a part of a multidisciplinary rehabilitation program aiming at RTW, regardless of the patient population the intervention was provided for.;
- The interventions examined had to be RTW multidisciplinary rehabilitation programs that included OT (i.e. the therapeutic efforts had to be part of a defined program whose specific goal was to help patients re-enter or remain in the work force);
- The outcome measures had to measure work-related outcomes such as RTW, sick leave, or employment status;

Studies were published between 1980 till September 2010.

Vocational rehabilitation studies that did not explicitly describe or mention OT involvement were excluded (see figure 1).

A preliminary pilot study used to determine how to direct the literature search, showed that OT was often part of multidisciplinary teamwork or program described under “vocational rehabilitation”. Therefore, “vocational rehabilitation” was added to the search terms “occupational therapy” and “return to work” (see figure 1).

Figure 1: Search strategy .



* : Criteria used to exclude selected studies
Studies in which the term "occupational therapy" did not occur in title and/or abstract studies that did not contain "occupational therapy" and "return to work" in the title, abstract and/or key-words
Studies in the field of "occupational medicine /occupational rehabilitation" that discussed return to work (RTW) but did not mention occupational therapy (OT).
** Exclusion-criteria:
No correct reference information mentioned (no authors name indicated, lists of articles from congress books,…)
Doubles (studies that appeared in multiple electronic sources)
*** : After screening with PICO items, reviews and descriptive studies were excluded but intervention studies were included
****: studies excluded after analysing the full text (role of OT in RTW process), excluding those studies that did not explicitly mention OT as a part of the multidisciplinary rehabilitation programme.

By screening the titles, abstracts, and keywords for the terms “occupational therapy” and “return to work” potential studies were identified. Studies published in German [11-13] were also included. Additionally, using the names of researchers authoring relevant studies, a “snowball search” was used by screening the reference lists of selected articles for pertinent references. Additional research material suggested by OT experts was screened too.

3.2 Data extraction

Data extraction from the included papers was performed by one researcher (H.D.) and checked for accuracy by the other authors. Disagreement in data extraction was resolved by consensus. As the structure and content of the OT programs remained vague, except for the study of Lambeek et al., the authors were invited by e-mail between October and December 2010 to provide more information. From 3 studies additional information was provided [14-16].

3.3 Quality assessment

Quality assessment was performed by evaluating methodological quality of the studies [17-19]. Internal validity, study methodology, and external validity were assessed.

Internal validity

The criteria used to check internal validity were the quality of the sampling, the quality of randomisation and experimenter blinding, sufficient number of participants for statistical evidence, and description of confounders and bias. Three levels of scoring were used: (A) when the number of participants was sufficient to produce reasonably acceptable statistical power, randomisation was carried out carefully for RCTs (including blinding) and it was described whether (and in which way) confounders and bias were taken into account; (B) when all criteria were met as far as practically possible, but some compromises were necessary or when a description of how confounders and bias were treated was lacking; (C) all other cases.

Methodological quality

Criteria used for the methodological evaluation were appropriateness of data analysis, loss-to-follow-up/selective loss-to-follow-up, intention-to-treat analysis/per protocol analysis, and compliance. Three levels of scoring were used: (A) when all of these criteria were described in the article and treated appropriately; (B) when appropriate data analysis was carried out and some but not all of the criteria were described in the article or some comments could be made on the methodological approach; (C) when appropriate data analysis was carried out, but the methodology was not described or was poorly described.

External validity

Criteria used to evaluate external validity were whether the conclusions were applicable to situations in other geographic areas, importance (quantitative) of the populations for which the conclusions are likely to be applicable, and scope of generalizability (non-specificity of the sample). Three levels of scoring were used: (A) RCT studies that were likely to be applicable to large populations and likely to be geographically independent; (B) cohort studies that were likely to be generalizable and/or that examined somewhat specific populations; (C) studies that examined very specific populations (e.g. traumatic brain injury in military personnel on duty).

4 RESULTS

Evidence was gathered about the effect of OTIs in vocational rehabilitation on RTW by analysing peer-reviewed papers on OTIs that focussed on RTW. The search focussed on RCT and cohort studies, initially obtaining 1532 titles of potentially pertinent papers (see figure 1). For the 251 articles that met the inclusion criteria, abstracts were analysed for the explicit use of OT as a part of the rehabilitation interventions aiming at RTW. Of these articles, 26 were selected for further full-text review. These papers were subjected to further analysis using the inclusion criteria mentioned. This review focussed on studies that specifically and explicitly focussed on OT as part of a multidisciplinary rehabilitation program. This strict inclusion criterion did lead to finally withhold six studies.

4.1 Studies selected

Six papers [14-16;20-22] finally met the quality criteria. These six studies included 899 patients older than 18 years (active age) that participated in rehabilitation programs aimed at RTW. All studies included patients – suffering from differing problems - who had jobs at the time of the research project in which they participated and patients were supported by social security system and/or private insurances. The patients were evaluated after the program (1 week to 42 months after discharge). Three of the studies were RCTs; the remaining three were cohort studies. Methodological characteristics and quality are presented in Table 1.

Table 1: Study and patient characteristics and methodological evaluation

Author	Diagnosis	Design	Follow-up	Internal validity*	Methodology *	External validity*
Jousset et al., 2004	Chronic low-back pain	RCT/single blind	Evaluation 6 months after programme in rehabilitation centre	B	B	A
Joy et al., 2001	Low-back injury	Retrospective cohort study	Telephone interview 4 weeks after termination of treatment programme	B	B	C
Lambeek et al., 2010	Chronic low back pain	RCT	Assessment at baseline, 3,6,9,12 months	A	A	A
Schene et al., 2007	Major depressive disorder	RCT	Assessments at baseline, 3, 6, 12, and 42 months	B	B	A
Sullivan et al., 2006	Whiplash injury	Longitudinal cohort study	Structured interview questions 1 year post-protocol treatment	A	B	B
Vanderploeg et al., 2008	Traumatic brain injury (military personnel)	RCT intent-to-treat: 2 different treatments	Follow-up telephone calls 1, 6, 12, and 24 months after discharge	A	A	C

One of the selected studies was of high quality (A score) for all the items. Two selected studies showed good internal validity (score B), and 3 showed moderate internal validity (score C). Four studies were of moderate methodological quality (score C), and only two studies—Vanderploeg et al. [16] and Lambeek [14] —were of high quality (score A). Three studies—Jousset et al. [20], Schene et al. [15] and Lambeek et al .[14] and Vanderploeg et al. [16] did have limited external validity (score C) because they focussed on very specific target groups. Potential bias from selecting patients in insurance-paid programs was recognised by Vanderploeg et al.[16]and Lambeek et al.[14], but not specifically mentioned by the other studies.

Although all studies in this review focussed on RTW and the role of OT in that process, analysis showed many differences which hindered comparison of the studies and their results. All studies showed an effect on RTW in a program in which OT is involved, although large heterogeneity is found. Studies differed in type of intervention, patient type involved, operational definition of the notion RTW and in follow-up period.

4.2 Outcome measures and definition of return to work

All of the selected studies denoted RTW as an outcome measure but their definition of RTW and what RTW involves varied widely (Table 2).

Concluding whether a given intervention has (successful) effects regarding its goal (RTW) depends on the definition of "successful RTW" (see table 2). In the studies reviewed here, both the definition of successful RTW, which ranged from part-time to full-time employment, and the time of follow-up, which ranged from 1 week to 42 months, differed substantially. In the study of Joy et al. [21], successful RTW was measured in terms of the percentage of RTW compared to the situation before participants entered the program. Although the other selected studies also compared different forms of treatment including OT, they did not demonstrate precisely how each professional discipline contributed to RTW.

Table 2: Objectives, return to work (RTW) definitions and outcome measures

Author	Objective	Defining RTW result	Outcome measures
Jousset et al., 2004	Compare RTW (1) in patients participating in a multidisciplinary functional restoration programme to RTW in patients participating in active individual therapy	Significantly lower mean number of self-reported sick-leave days	Number of self-reported sick-leave days during 2 previous years were noted at start of 5 week programme Number of self-reported sick-leave days 6 months after the programme RTW within 1 week after programme Subjective rating : Ability to work Improved physical condition
Joy et al., 2001	RTW after work-hardening programme	Either part-time of full-time RTW at the time of follow-up phone calls (in original or alternative job)	Functional capacity Age Length of injury (days) Time in program (days) Work status (did or did not RTW) Pain level Pain tolerance (% improvement) Activity tolerance (% improvement)
Lambeek et al., 2010	to evaluate the effectiveness of an integrated care programme, combining a patient directed and a workplace directed intervention, for patients with chronic low back pain	Duration of sick leave due to low back pain in calendar days from the day op randomisation until full RTW in own or other work with equal earnings for at least four weeks without recurrence, partial of full.	Primary outcome : duration of time off work (work disability) Secondary outcome : intensity of pain and functional status the integrated care programme substantially reduced disability due to chronic low back pain in private and working life improvement of pain between groups did not differ significantly

Schene et al., 2007	Work resumption	Significant difference between TAU(4) and TAU + OT (5) in time between baseline assessment and time of RTW for patients who did not work at baseline assessment Total hours worked during each 6-month period up to 42 months for the total population	Depression Work resumption Work stress Service use and qualitative evaluation Economic evaluation
Sullivan et al., 2006	Compared percentage of RTW in patients participating in PGAP + PT (6) to those participating in PT (7) alone	Returning to full-time pre-injury employment or alternative employment	RTW (primary outcome variable) catastrophizing Fear of movement or reinjury Perceived disability Pain severity
Vanderploeg et al., 2008	Comparing RTW or return to school in patients participating in 2 rehabilitation approaches	Current status of paid employment or school enrolment (either full- or part-time, not as part of a sheltered workshop)	RTW / school Living independently Satisfied with life Chance in martial state since injury Social withdrawal Worrying Depressed mood Irritability Angry behaviour

Legend Objectives, return to work (RTW) definitions and outcome measures

RTW :return to work; 2 FRP :functional restoration program ; 3 AIT :active individual program ; 4 TAU :treatment as usual ; 5 TAU + OT :treatment as usual + occupational therapy; 6 PGAP :Progressive goal attainment program + physical therapy ; 7 PT(physical therapy); 8 TBI (traumatic brain injury)

4.3 What are the effects of OTIs in vocational rehabilitation on RTW?

All OTIs affected RTW. Jousset et al. [20] found significantly lower mean numbers of self-reported sick-leave days in the functional restoration group who took part in OT. Joy et al. [21] suggested that multidisciplinary programs (including OT) such as work-hardening and functional restoration may be of benefit in helping the patients identify and resolve issues that often contribute to disability exaggeration leading to greater RTW success independent of any changes in a patient's overall pain level. This parallels the findings of Lambeek et al. [14], who also concluded that disability decreased although improvement of pain did not differ between both groups. Schene et al. [15] found that adding OT to the usual treatment increased and accelerated work resumption of people suffering from depression. OT, however, did not accelerate recovery from depression. Results of the work of Sullivan et al. [22] revealed that a risk-factor-targeted intervention administered by physical therapists and occupational therapists can have a meaningful impact on RTW following whiplash injuries. The impact of their program was most pronounced for the subgroup of subjects who scored in the risk range on all psychosocial variables targeted by the program. Vanderploeg et al. [16] added (measured by in-person evaluations and structured telephone interviews at 1 year after the programs) the amount of help that the participating patients with traumatic brain injury received and details on any vocational activity over the year since completing the study protocol to their RTW measure. Their study found no difference in RTW between patients that received cognitive didactic and those who received functional experiential approaches during traumatic brain injury rehabilitation.

4.4 What aspects of OT contribute to these effects?

Effects of OTIs in rehabilitation programs regarding RTW are recognisable, but large differences in settings, design, in- and exclusion criteria, disciplines concerned in the study-programs, and in outcomes made it difficult to determine the extent to which OT contributions to these interventions affected RTW (see table 3).

The different OTIs, integrated in the multidisciplinary intervention are:

- Jousset et al. mention "work simulation" as part of the Functional Restoration Program but do not specify what exactly the content of that part of the program was, in which settings it was performed or what the specific approach of the occupational therapist was [20].
- Lambeek et al. [14] mention the contribution of occupational therapists in the description of the study, but in the specifications of different types of therapeutic services, provided in primary and secondary care, the description "occupational therapist" is not used. Nevertheless, the additional description of the protocol of the "integrated care " used in the study, point outs very clearly in what way occupational therapy was used. The main part of the work of the

occupational therapist included in the study of Lambeek et al. [14] is to provide a workplace intervention. Being a member of the multidisciplinary team, the OT takes part in gathering patient information. In the additional report [23], a detailed OT protocol is included and supported by an "occupational therapist flow chart", thus indicating the OTI time-span. Every four weeks (telephone) conferences with the clinical occupational physician, physical therapist and medical specialist need to take place. The protocol mentions the issues that need to be discussed and the timeframe for the OTI.

- The content of a therapeutic program item like "work hardening" is mentioned in the work of Joy et al., but is not clear what the therapeutic actions are, what type of approach is used, what activities are performed [21].
- The program of Schene et al. [15] provides three individuals visits in the last phase. The information, separately published in the intervention protocol, clarifies precisely the content of the program [24].
- The OT part of the program of Sullivan et al contains "increasing activity involvement" but it is not specified in the study-report what precisely the therapeutic actions of the occupational therapist were [22].
- Vanderploeg et al. [16] mention that the OT was part of the multi-disciplinary team, but do not give further details on the content of the input of OT. The additionally provided information [25] gives more specific information on the research protocol, however, no specification of the precise content of the occupational therapy part of the program was indicated [25]. The protocol clarifies how the whole team had to collaborate but does not offer a detailed description of the specific actions of each discipline involved.

Whether OT had a meaningful role in the outcome of the different programs, is not only a result of the OT contribution itself, but also of the composition of the services offered by the multidisciplinary team concerned in the program (see tables 3 and 4).

Remarkable in the selected studies was the mixture of terms used to describe multidisciplinary teams. The disciplines concerned in "multidisciplinary rehabilitation" across the six studies show that a great variety of disciplines is involved in RTW programs. Moreover, many of the authors failed to differentiate between occupational therapy, physiotherapy, and physical therapy. Lambeek et al. [14] however, describe precisely the contribution of each discipline in the multidisciplinary team, including a flow chart of the process in which each of those team members was involved in the integrated care protocol.

Table 3: Intervention description, OT elements in the intervention, assessment instruments and general conclusions

Author	Description intervention	OT elements in the intervention	Instruments used for assessments	General conclusions
Jousset et al., 2004	**Functional restoration programme (FRP)** including intensive physical training, occupational therapy, psychological support and dietic advices a day, 5 days a week, 5 weeks. **Active individual therapy (AIT):** 1 hour treatment sessions, 3 times a week during 5 weeks (programme of exercises to perform alone at home for 50 min. on the 2 remaining weekdays.	Daily for 1.15 hrs. Flexibility, Endurance, Co-ordination, Weight lifting, Work simulation	Trunk flexibility by fingertip-floor distance Trunk strength by isometric contraction (ITO et al & Biering-Sorensen) Lifting : Progressive ISO-inertial lifting evaluation (PILE) Level op pain : VAS QoL & functional indexes French version of Dallas pain questionnaire Quebec back pain disability scale Hospital anxiety depression scale Use of prescript medication	FRP was more efficient then AIT in reducing the number of sick leave days, improving physical condition: FRP from 102,3 to 28 days AIT 109,8 to 48 days
Joy et al., 2001	**Work hardening programme:** Job-specific work simulations Physical conditioning Education Patients who did RTW after work hardening program to patients who did not RTW after work hardening program	Initial intake evaluation, Daily activities schedules, Case-management, Pain management techniques, Individual work simulation activities, Discharge planning	Study specific questionnaire pain drawing (indicating where pain was felt) 10 point pain level indication scale Physical assessment Functional abilities testing for 16 physical demands Exit-questionnaire Improvement scale (pain tolerance, activity tolerance) at exit program Determining RTW by contacting patients after discharge (1, 6, 12 and 24 months)	No significant differences due to age, gender, length of injury, days spent in work hardening program or change in pain level Significant difference in pain tolerance (men: 26,8% vs 42,0%; women: 24,2% vs 39,1%) No significant difference in activity tolerance

Lambeek et al. (2010)	**Care as usual** medical specialist occupational physician general practitioner and/or allied health professionals **Integrated care** coordination by clinical occupational physician team members : medical specialist, OT, physiotherapist; integrated care protocol: care-management by occupational physician (from 1 to full sustainable work or to week 12) work place intervention (using occupational therapist brainstorm (from week 3 tot week 12) graded activity (from week 2 till1 full sustainable work or to max. week 12)	Assessment patients functional capacity at baseline Workplace intervention 26 sessions of graded activity	Questionnaires at baseline and 3,6,9,12 months primary outcome (full RTW): - Self reported sick leave - Data from dbase of the occupational health service Secondary outcome: - VAS (pain) - Roland disability questionnaire (functional status) Prognostic factors for duration of sick leave - Job content questionnaire (potential work related psycho-social factors) -Dutch musculoskeletal questionnaire (data on workload)	The integrated care programme substantially reduced disability due to chronic low back pain in private and working life
Schene et al., 2007	**Treatment as usual (TAU**) (out-patient psychiatric treatment for depression) Clinical management antidepressants 30 min visits every 2-3 weeks compared to **TAU + Occupational Therapy (OT**)	**Diagnostic phase (4 weeks)** : five contacts with a detailed occupational history, video observation in a role -played work situation, contact with an occupational physician of the patients employer and a plan for work reintegration **Therapeutic phase (24 wee**ks) : 24 weekly group sessions and 12 individual sessions: 3 sub phases : preparation to work reintegration, contacting the place of work and if possible starting to work in individual sessions : further analysis of the relationship between work and depression, exploration of work	DSM-IV (major depression Episode) Beck Depression Inventory (BDI) Questionnaire organisation stress (QOS) Study specific questionnaires	The addition of OT did not accelerate recovery from depression The addition of OT accelerates and increases work resumption The addition of OT did not increase work stress

		problems, support and evaluation of work resumption **Follow-up phase (20 weeks)** : three individual visits		
Sullivan et al., 2006	Compare RWT rates of **additionally Progressive goal attainment programme (PGAP)** to the results of a historical cohort enrolled in a functional restoration physical therapy intervention.	Education and reassurance Maintaining activity log Activities scheduling Walking programme Increasing activity involvement Overcoming psychological obstacles to activity involvement	McGill pain questionnaire, pain rating index (MPQ) Pain catastrophizing scale (PCS) Tampa scale for kinesiophobia(TSK) Pain disability Index (PDI)	A psychosocial risk factor targeted intervention in combination with physical therapy can lead to significant increases in the probability of RTW following whiplash injuries. (75% vs 50%) The combination of psychosocial intervention with physical therapy may emerge as a viable and cost-effective approach for the prevention of prolonged pain and disability following musculoskeletal injury.
Vanderploeg et al., 2008	**Cognitive-didactic programme (CD)**: 1,5 to 2,5 hours of protocol specific cognitive-didactic interventions (Individual treatment) with another 2 to 2,5 h daily of OT & physiotherapy Emphasis on building self-awareness No real life tasks and settings **Functional experiential rehab therapy (FE)** 1,5 to 2,5 hrs of protocol specific functional-experimental treatment with another 2 to 2,5 h daily of OT & physiotherapy. Focus on developing useful functional abilities or skills	**All** Basic activities of daily living, range of motion, mobility **CD**: Training 4 cognitive domains (attention, memory executive functions, pragmatic communication) Trial and error approach **FE**: Real life performance situations and common tasks Learning by doing	Functional Independence Measure (FIM) Disability Rating Scale (DRS) present state exam apathy evaluation scale neurobehavioral rating scale life satisfaction (self-rating and clinical interview)	No difference between cognitive-didactic and functional-experiential approaches to TBI rehab on primary 1 year global outcome measures. However, patients at the cognitive treatment arm had better post treatment cognitive performance . At 1 year post injury, the overall rates of independent living and employment and/or student status were 58,9 % and 37,2 % respectively.

Table 4: Study design, settings, in- & exclusion criteria, disciplines concerned and key measures / variables

Author	Design	Settings	In (I)- and exclusion (E) criteria	Disciplines concerned in multi-disciplinary team	Key measures / variables
Jousset et al., 2004	RCT/single blind	Patients of 3 counties in the west of France, referred to the multidisciplinary Low Back Pain clinic by industrial physicians, family doctors, specialists or social insurance medical advisers and assessed by a physiatrist, an occupational medicine specialist, a psychologist and an ergonomist	**I** : 18 - 50 years old, living in 3 counties in west of France, engaged in a non-limited contract, threatened, at risk of unable to work in their job situation by Low back pain LBP, not relieved by conventional medical or surgical intervention **E** : lack of motivation, major psychiatric diseases; no disabling (LBP), LBP of specific origin, recent surgery, cardiac of respiratory abnormalities after exercises stress, receiving disability pension, refusal to randomisation	Aerobics, Strengthening exercises, Proprioception endurance training by physiotherapist OT Balneotherapy Psychologist Dietic advice	RTW after 6 months end program Mean number of sick leave days Physical criteria Treatment appreciation Intensity of pain Quality of life Functional indexes Psychological characteristics Number of contacts with medical system Drug intake
Joy et al., 2001	Retrospectiv e cohort study	Northern Californian work hardening program, patients authorised to attend by their workers compensation board	**I** : records from patients with low-back injuries referred to a work hardening program in Northern California from march 1989 to august 1996; at referral off work for 2 months or more since injury or surgery, entitled to workers- compensation benefits **E** : data from patients referred for reasons other than low back injury	Physiotherapist OT Vocational counsellor Psychologist Workroom foreman	Functional capacity Age Length of injury (days) Time in program (days) Work status (did or did not RTW) Pain level Pain tolerance (% improvement) Activity tolerance (% improvement)

Lambeek et al. 2010	RCT	Primary care in the Netherlands 10 physiotherapy practices, one occupational health service, one occupational therapy practice Secondary care 5 hospitals in the Netherlands.	**I:** age 18 – 65; low back pain (for more than 12 weeks); visited outpatient clinic in participating hospitals; in paid work (self-employed and paid employed) for at least 8 hours /week absent (total or partial) from work **E** : patients absent from work >2 years worked temporally or for an employment agency without detachment; specific low back pain due to infection, tumour, osteoporosis, RA, fracture, inflammatory process; undergone surgery or invasive examinations within 3 months serious psychiatric or cardiovascular illness were pregnant; were engaged in a lawsuit against their employer	Clinical occupational physician Medical specialist OT Physiotherapist	Primary RTW :duration of sick leave due to low back pain in calendar days from the day of randomisation until full RTW (or work with equal earnings for al least 4 weeks without recurrence, partial or full). Secondary pain (3,6,12 months) functional status (3,6,12 months)
Schene et al., 2007	RCT	research was conducted as part of the Programme for Mood Disorders of the Department of Psychiatry of the Academic Medical Centre of Amsterdam	**I**: age above 18; major depressive disorder single episode of recurrent without psychotic features; no history of psychosis, manic, hypo manic or cyclothymic features; no history of active drug or alcohol abuse or dependence a Beck Depression Inventory scale of > 15 work reduction of at least 50 % of regular hours worked per week because of depression (with a minimum of 10 weeks and a maximum of 2 years) **E**: after telephonic screening on inclusion criteria, patients received a regular psychiatric evaluation(2 visits) by two trained senior psychiatrists who checked again for the inclusion criteria	Psychiatrist (trained for the program) OT	Age Gender Married or not Living alone or not Education (< high school or not) Employment before illness (hours/week) Major depressive disorder Beck Depression Inventory (BDI) Questionnaire Organisation Stress (QOS) Study specific questionnaires (qualitative data)

Sullivan et al., 2006	Longitudinal cohort study	eastern Canadian rehab centres (10 week standardized psychosocial intervention program, secondary prevention)	**I** : whiplash injury following an vehicle accident (grade I and II), score within the risk range (i.e. above 50 percentile) on at least one of the psychosocial measures targeted in the program, patient in one of 5 rehab clinics in eastern Canada whose staff had attended a 2-days training workshop on PGAP intervention techniques, being employed prior to their motor vehicle accident, providing informed consent participating in a functional restoration physical therapy program **E** : not being employed	Physical therapist OT Occupational health nurse Office assistant (interviews)	RTW (primary outcome variable) Catastrophizing Fear of movement or reinjury Perceived disability Pain severity
Vanderploeg et al., 2008	RCT intent-to-treat: 2 different treatments	CARF standards of care interdisciplinary rehabilitation services in 4 veteran administration cure inpatient TBI rehabilitation programs (USA).	**I** : moderate to severe Traumatic Brain Injury (TBI) within preceding 6 months (Glasgow outcome scale) and/or focal cerebral contusion (CT or MRI), RLAS cognitive level of 5 to 7 at time of randomisation, 18 years or older, active duty military member or veteran anticipated length of needed TBI rehab of 30 days or more **E** : history of prior inpatient acute rehab for the current TBI, history of a prior moderate to severe TBI or other pre-injury severe neurological or psychiatric condition	physical therapy OT Speech therapy Neuropsychological therapy	RTW / school Living independently FIM DRS Satisfied with life Chance in martial state since injury Social withdrawal Worrying Depressed mood Irritability Angry behaviour

Recognizing the role that OT plays in the overall therapeutic effort (by using the WFOT definition of the profession [1]), is not obvious, but for experienced OT's nevertheless very well recognisable in the papers by Jousset [20], Joy, Sullivan [22] and Vanderploeg [16;25]. This finding supports the statement of Lee and Kielhofner that specific evidence of OTIs is lacking.

Schene et al.'s [15] conclusions show that a holistic approach (e.g. psychosocial intervention combined with physical therapy) is useful for preventing loss of capacities (and thereby loss of the ability to work). Moreover, Sullivan et al. [22] suggested that a holistic approach can increase successful RTW by 25%. Vanderploeg et al. [16;25] determined the contribution of OT (cognitive-didactic versus functional-experiential approaches) during different stages of the therapeutic process. Referring to the definition of OT used in this review, the cognitive-didactic approach can be considered as the OTI in the Vanderploeg et al. study [16]. Although they did not find significant differences after one year of rehabilitation, they found that participants in the cognitive-didactic program showed better post-treatment cognitive performance.

5 DISCUSSION

The primary aim of this systematic review was to identity the effectiveness in terms of Return to Work (RTW) of Occupational Therapy Interventions (OTIs) in rehabilitation patients with non-congenital disorders. In general, findings show results in favour of using OT in a multidisciplinary rehabilitation when targeting RTW. The effect of OT, measured at follow-up in terms of the number of sick-leave days or in terms of employment status, showed good results.

A great deal of the literature (1027 of 1532 articles) fitted the search terms but did not examine interventions that specifically and explicitly included OT. The selected literature (1532 preliminary results) contained a lot of descriptive studies, qualitative research and reviews. Therefore, using a strict set of inclusion criteria, the search was focussed on RCTs or cohort studies, leaving descriptive literature aside. As a result, this review is based on six studies and reveals that better RTW results are achieved when rehabilitation focuses on functionality using OT, as already suggested by the WFOT and confirming the reasoning of Wright.

Since a large variety of interventions, with different patient-populations were performed by the occupational therapists of these programs used in the studies, it was difficult to compare - and thereby generalise - the results of these studies. In order to do so, both uniform terminology and specific, detailed descriptions of the therapeutic content of the OTIs would be needed. This supports the statement of Lee and Kielhofner [2], as they point out the lack of well-described definitions in the field of OT research. Research efforts indicate that performing or simulating patients' "work activity" during rehabilitation can be very valuable in assisting them to restore their labour-participation [26-28]. Therefore, it would

be very beneficial for constructing “good practice” to determine in further research efforts exactly what sort of interventions an OT program needs to implement in order to be as successful as possible, as provided in the work of Lambeek et al. [23] and Schene et al. [15].

Schene et al. [15] demonstrated that, in comparison to a psychosocial intervention alone, adding OT increases RTW for people suffering from major depression. Results of Lambeek et al. [23] tend to support this statement regarding RTW for patients suffering from low back pain. Jousset et al. [20] showed a decreased number of sick-leave days in workers with low-back injuries.

There are thus indications that OT is a key element in the therapeutic program. Nevertheless, the scientific evidence on which these OTIs would be based, can only – to ensure solid evidence – be retrieved from two studies. In literature, occupational therapists report many challenges in adopting and implementing evidence-based principles to practice. According to Lee and Kielhofner, research indicates that current OT practice is still not strongly grounded in theory, occupation and evidence [2]. They state that, although occupational therapists provide a range of work-related interventions, specific evidence related to OT in the area of vocational rehabilitation remains somewhat limited [2].

Lee and Kielhofner found that published works tend to focus on issues of scholarship rather than implications for practice, thereby often limiting the practical implementation of the findings into OT practice. Nevertheless, Lee and Kielhofner also state that experiences (of some authors of projects in which occupational therapists are involved) indicate that simultaneous consideration of theory and evidence is advantageous to achieve occupation-focuses best practice [2].

Simultaneous addition of other interventions on the other hand, such as care management and physical therapy (graded activity) [18], clog the precise effect of the OTI. In their report, Lambeek et al. [14;23] do not comment on a possible cross-over or a mutual re-enforcing effect of components of the integrated care program as effected by respectively the clinical occupational physician, the physical therapy and the OT. They do, however, in the discussion part of their report, regret the fact that the study design was not suitable for assessing the effectiveness of the individual components of the integrated care intervention (integrated care management, workplace intervention, and graded activity). In this study the randomization compared usual care to a workplace intervention, in which the medical team was enlarged by the employer, aiming at identifying the barriers and coming up with solutions. Average patient contact for providers was the same for the occupational medicine physician and the occupational therapist with approximately 17 sessions with the physical therapist. Clearly, an unambiguous identification of the OTI was not possible. The study indicates the fact that OT can/does have a role to play when RTW is at stake. Lambeek et al. [14] presume that a factorial design, and additional qualitative research focussing on the experience of healthcare professionals and patients, could give more insight into the effective components of the intervention.

In the protocol used in Schene et al. [15], the authors specify the socio-economical context in which the intervention took place. Referring to the Dutch legislation and the care that can be provided within that legal framework, de Vries and Schene [24] clarify how "care as usual" needs to be understood; this information was lacking in other studies.

In occupational therapy literature, different authors have been mentioning the importance of "work" as a life-domain that cannot be neglected by the therapeutic programs offered by occupational therapists [29-34]. Gibson and Strong [35] stated that occupational therapists can play a major role in work rehabilitation for RTW by assessing and rehabilitating workers with a disability injury. Kinébanian & Le Granze indicate that Lee and Kielhofner [2] described and synthesised evidence about work-related OTIs the Model of Human Occupation (MOHO) [36] . MOHO-based work programs have been shown to have positive impact in improving vocational outcomes for a broad range of clients, including persons with chronic illness [2;7;9;12;13;37;37-40]. Studies included in the work of Lee and Kielhofner [2] point to the need for further research to more fully examine the effectiveness of programmes involving different diagnostic groups .

The authors of this review agree with Lee and Kielhofner [2] that occupational therapists should put more effort in clearly documenting the specific therapeutic actions they deliver in the RTW process, as provided by Schene et al. [24] and Lambeek et al. [14;23]. Therapeutic actions such as work hardening, work simulation, preparation for work reintegration, contacting the place of work, starting work in individual sessions, exploration of work problems, support and evaluation of work resumption need to be described more precisely in order to document the specific content of OT actions and to be able to repeat these actions. When efforts of occupational therapists are described and taken into a precise protocol, taking the work of Schene et al. and Lambeek et al. as inspiration [14;15;23], comparison is facilitated.

As occupational therapists try to restore the abilities of their patients during the rehabilitation process, they need well-constructed evidence pertinent to the unique situations they may encounter. This supports both the occupational therapist and the patient to construct a therapeutic pathway that fits the unique and individual reality of the patient.

By pointing out both the base evidence for "good practice" and the need to construct valid and reliable OTIs, this review sheds light on how occupational therapists need to work in order to develop adequate therapeutic answers for patients' needs. As this systematic review is set up as a part of a research project, aiming on a RCT on OT and RTW, we also try to assist in overcoming the indicated shortcomings. Far too long, OT's have focused on practice "in the field", without publishing practical- or research results on their work. As – following the evolution the input of the WFOT - in more and more countries, not only bachelor-level research is done, but OT's are participating in research on master of PhD level, one can expect that more research (both qualitative and quantitative) will be published.

In the systematic search we carried out, the aim was to identify studies in which OT was involved, trying to find indication for further research. Except for the study of Vanderploeg et al. [16] no other publication could be found in which OT was separately measurable. This indicates the need for a (relatively young) profession like OT to clarify the effects that OTI can have in strengthening the work of the team and delivering benefit for patients on specific issues (function, activity and participation) in lives domains like self-care, leisure and productivity.

Using uniform terminology will clarify the existing confusion that stems from the use of different terms and content (e.g., occupational therapy versus physical therapy; return to work versus work resumption versus job re-entry). Eliminating this confusion can help caregivers and patients to get a clear notice of what service they can claim when an occupational therapist is included and what results they may expect when an OTI. Finally, in order to clarify and construct evidence supporting the value of OT in restoring labour participation for rehabilitation patients, much research still needs to be done.

6 CONCLUSIONS

The goal of this systematic review was to analyse the effectiveness in terms of Return to Work (RTW) of Occupational Therapy Interventions (OTIs), in order to construct evidence for OTIs programs providing RTW assistance for rehabilitation patients. Descriptive literature and information from experienced practitioners in the field of OT reveal that occupational therapists are increasingly involved in assisting patients in restoring their workability. This systematic review provides sufficient evidence that rehabilitation programs that included OTIs do contribute to RTW, but it is not clear yet what the effective ingredients are, except for work place interventions [14]. Only six studies met the inclusion criteria and varied regarding population, outcome measure, or had weak descriptions of the methodology used. Thus, a univocal indication of “good practice” of an OTI aiming at RTW is lacking. Even though, the results of this review contribute to clarifying what steps need to be taken to construct the evidence needed and, even more, can stimulate occupational therapists and researchers in their efforts to continue the work that needs to be done.

7 AUTHORS CONTRIBUTIONS

All authors were involved in the process of setting up the strategy for this study. PD supervised the study. HD carried out the research work itself, the other authors screened retrieved papers on in- and exclusion criteria and they also appraised the quality of the retrieved studies. The draft of the manuscript was supervised by PD, AdR & EvH.

All authors read and approved the final manuscript.

8 ACKNOWLEDGEMENTS

The authors wish to thank Gary Kielhofner and Renee Taylor for their stimulating support for this paper. We also thank C. Kuiper for delivering additional material for this review and researchers of Maastricht University (Department of Social Medicine, Faculty of Health, Medicine and Life Sciences) for their feedback.

9 REFERENCE LIST

(1) WFOT.org, (Internet) World Federation of Occupational Therapy. www wfot org 2010.

(2) Lee J KG. Vocational intervention based on the Model of Human Occupation: a review of evidence. Scand J Occup 2010;17(3):177-90.

(3) Reed KL, Sanderson SN. Concepts of occupational therapy. fourth edition ed. Lippincott Williams & Wilkins; 1999.

(4) Holmes J. Vocational rehabilitation. Oxford: Blackwell Publishing; 2007.

(5) Meriano C, Latella D. Occupational Therapy Interventions Function and Occupations. Thorofare: SLACK Incorporated; 2008.

(6) Whyte J. A Grand Unified Theory of Rehabilitation (We Wish!) The 57th John Stanley Coulter Memorial Lecture. Archives of Physical Medicine & Rehabilitation 2008;89:203-9.

(7) Korevaar L, Dröes J. Handboek Rehabilitatie voor zorg en welzijn. Uitgeverij Coutinho, Bussum NL; 2008.

(8) Wright M. Early return to work & occupational therapy. OT Practice (OT PRACT) 1997 May;2(5):36-42.

(9) Kielhofner G, Braveman B, Baron K, Fisher G, Hammel J, Littleton M. the model of human occupation: understanding the worker who is injured or disabled. Work: A Journal of Prevention, Assessment and Rehabilitation 1999;12(1).

(10) Meriano C, Latella D. Occupational Therapy Interventions Function and Occupations. Thorofare: SLACK Incorporated; 2008.

(11) Dibbelt S. Long-term efficiency of orthopedic rehabilitation in chronic back pain -- the integrative orthopedic psychosomatic concept (IopKo) [German]. Rehabilitation 2006 Dec;45(6):324-35.

(12) Häussler B. Improvement in occupational rehabilitation of myocardial infarct patients--results of a model study in Rhineland-Pfalz. Rehabilitation (Stuttg) 1997;36(2):106-10.

(13) Pfund A. Coronary intervention and occupational rehabilitation--a prospective, randomized intervention study. Z Kardiol 2001;90(9):655-60.

(14) Lambeek LC, van Mechelen W, Knol DL, Loisel P, Anema JR. Randomised controlled trial of integrated care to reduce disability from chronic low back pain in working and private life. BMJ 2010;2010(340:c1035).

(15) Schene AH, Koeter MWJ, Kikkert MJ, Swinkels JA, McCorne P. adjuvant occupational therapy for work-related major depression works: randomized trial including economic evaluation. Psychol Med 2006 Nov 20;37:351-62.

(16) Vanderploeg RD. Rehabilitation of traumatic brain injury in active duty military personnel and veterans: Defense and Veterans Brain Injury Center randomized controlled trial of two rehabilitation approaches. Arch Phys Med Rehabil 2008;89(12):2227-38.

(17) Hickson M. Research Handbook for health care professionals. Malden USA: Blackwell Publishing, 2008.

(18) Petticrew M, Roberts H. Systematic reviews in the social sciences, a practical guide". Malden USA: Blackwell Publishing, 2006.

(19) Higgins JPT, Green S, Th. Cochrane Handbook for Systematic Reviews of Interventions. 2009.

(20) Jousset N. Effects of functional restoration versus 3 hours per week physical therapy: a randomized controlled study. Spine 2004;29(5):487-93.

(21) Joy JM. Increased pain tolerance as an indicator of return to work in low-back injuries after work hardening. American Journal of Occupational Therapy 2001;Print(2):200-5.

(22) Sullivan MJL. A psychosocial risk factor-targeted intervention for the prevention of chronic pain and disability following whiplash injury. Physical Therapy 2006 Jan;86(1):8-18.

(23) Lambeek LC, Anema JR, Van Royen BJ, Buijs PC, Wuisman PI, Tulder MW, et al. Integrated care, produced for use in integrated health care for patients with chronic low back pain. BMJ 2010 Mar 5;1-38.

(24) de Vries G, Schene A. Arbeidshulpverlening bij depressie. 875 ed. Psychiatrie AMC / De Meren; 2003.

(25) Vanderploeg RD, Collins RC, Sigford B, Date E, Schwab K, Warden D, et al. Practical and theoretical considerations in designing rehabilitation trials. The DVBIC cognitiv-didactic versus functional-experiental treatment study experience. Journal of Head Trauma Rehabilitation 2010;21(2):179-93.

(26) Loisel P. Management of occupational back pain: the Sherbrooke model. Results of a pilot and feasibility study. Occup Environ Med 1994;51(9):597-602.

(27) Loisel P. From evidence to community practice in work rehabilitation: the Quebec experience. Clin J Pain 2002;19(2):105-13.

(28) Paquette S. Return to work with chronic low back pain: using an evidence-based approach along with the occupational therapy framework. Work (WORK) 2008;31(1):63-71.

(29) Aitken RC. To work or not to work: that is the question. Br J Ind Med 1990;47(7):436-41.

(30) Asmundsdottir EE. The Worker Role Interview: A powerful tool in Icelandic work rehabilitation. Work: Journal of Prevention, Assessment & Rehabilitation 2004;Electronic(1):21-6.

(31) Bade S, Eckert J. Occupational therapists' expertise in work rehabiliation and ergonomics. work 2008;2008(31):1-3.

(32) Boyt Schell B.A., Blesedell Crepeau E, Cohn ES. Overview of intervention : section 1 : occupational therapy intervention. In: Schell BAl, Blesedell Crepeau E, Boyt Schell B.A., editors. Willard & Spackman's Occupational Therapy. 10 ed. Lippincott Williams & Wilkins; 2003.

(33) Braveman B. The model of human occupation and prediction of return to work: a review of related empirical research. work 1999;12(1):25-35.

(34) Leavitt R. The power of work: occupational therapy and thorough, standardized assessment can help people with mental health disabilities return to work and, thus, to their communities. Rehab Management: The Interdisciplinary Journal of Rehabilitation 2002 Jun 15;15(5):48-9.

(35) Gibson L, Strong J. A conceptual framework of functional capacity evaluation occupational therapy in work rehabiliation. australian occupational therapy journal 2003;50:64-71.

(36) Kinébanian A, Le Granze M. Grondslagen van de ergotherapie. Elsevier; 2006.

(37) Stanos S. Multidisciplinary and interdisciplinary management of chronic pain. Phys Med Rehabil Clin N Am 2006;17(2):435-50.

(38) Kielhofner G. Research in Occupational Therapy: Methods of Inquiry for Enhancing Practice. Chicago: F.A.Davis Company; 2006.

(39) Maunsell E, Drolet M, Brisson J, Brisson C, Masse B, Deschenes L. Work situation after breast cancer: results from a population-based study. J Natl Cancer Inst 2004 Dec 15;96(24):1813-22.

(40) Wright M. Early return to work & occupational therapy. OT practice 1997 May 2;2(5):36-42.

CHAPTER 3 : WHAT IS THE VALUE OF OCCUPATIONAL THERAPY IN RETURN TO WORK FOR BREAST CANCER PATIENTS? A QUALITATIVE INQUIRY AMONG EXPERTS

Huguette A.M. Désiron, Peter Donceel (†), Elke Van Hoof, Lode Godderis, Angelique de Rijk

Eur J Cancer Care (Engl). 2015 Mar;24(2):267-80

1 ABSTRACT

Background

An increasing number of patients are confronted with breast cancer (BC) and functional limitations after treatment. Occupational therapy (OT) is successful in return to work (RTW), but not yet available for BC patients. This paper explores experts' opinions on OT interventions for RTW in BC patients in the Belgian context.

Method

Primary data were topic-interviews with all heads of OT departments in Flemish University Hospitals (n=5). Secondary data were 4 focus group interviews with care professionals in oncological rehabilitation (n=41). All data were transcribed and thematic analysis was used.

Results

Integrated in multidisciplinary teamwork, OT interventions should have a holistic and client-centred approach, start early in the rehabilitation process, include workplace visits and contacts with relevant stakeholders, and use goal-setting to start up tailor made rehabilitation, linking assessment of abilities and work. Occupational therapists are regarded as professionals who can effectively answer BC patients unmet needs regarding RTW due to their skill to bridge between care and workplace. According to the experts, OT interventions supporting RTW in BC patients are useful when integrated in regular health care. They agree on the components but organisational barriers should be removed, e.g. not providing reimbursement for including this type of support trough health care insurance.

Keywords:

occupational therapy, breast cancer, return to work, expert opinion, qualitative research

2 INTRODUCTION

Due to improved treatment the survival rate of breast cancer (BC) patients has increased tremendously. But survivors are often confronted with chronic functional limitations due to the tumour and the consequences of treatment [1-3]. An increasing number of BC patients are younger(late) than 50, so the impact of the disease and the consequences of treatment on their functionality and participation in society can no longer be neglected [4]. Significantly fewer BC patients work after treatment compared with the general population [5]. Those who resume professional activity often cannot maintain the effort, lose their job or significantly reduce their (professional) activities [6-14]. Consequently, the focus should be on helping these patients to lead a full, productive, and meaningful life (Alfano and Rowland 2006). There is a general need for such rehabilitation but these services are usually not accessible to cancer patients (Silver and Gilchrist 2011).

Tamminga et al found a mean return-to-work rate of 62%, ranging from 30% to 93%, and conclude that only few interventions are primarily targeted at enhancing return to work (RTW) in patients with cancer. Cancer treatment is well studied but work-directed interventions to improve work functioning are not [15].

Barriers that exist in many countries between curative –medical care and work oriented –occupational medicine hinder the implementation of interventions that could support patients with (breast-)cancer in their transition from patient to "survivor" [16-20]. This paper focuses on the added value of an occupational therapeutic intervention to support RTW in BC patients.

In life domains such as productivity, leisure and self-care, rehabilitation focuses on assisting patients to maintain and/or restore participation in self-care, leisure and productivity including work [21]. In these life domains occupational therapists (OTs) assist their patients to regain functionality by supporting them in activity and participation as proposed in the International Classification of Functioning, disability and health (ICF) [22]. Occupational therapy is a client-centred health profession concerned with promoting health and wellbeing through occupation. For occupational therapists, the key-word occupation refers to the everyday activities that people do (as individuals, in families and with communities) to occupy time and bring meaning and purpose to life. [14]. To enable people to participate in the activities of everyday life is the primary goal of occupational therapy, achieved by working with people and communities to enhance their ability to engage in the occupations they want to, need to, or are expected to do, or by modifying the occupation or the environment to better support their occupational engagement [14]. Being able to work and having the opportunity to return to work is part of the service occupational therapists deliver to patients, but in many countries this service is not yet available for (breast-)cancer patients [23;24].

The contribution of OT in the care and rehabilitation of people with cancer is still relatively unrecognised among health professionals [25-30]. OT, however does improve occupational outcomes in adults with chronic diseases, thereby advocating their role in helping to meet their needs, as indicated in the description of OT as profession by the World Federation of Occupational therapists [14;31;32]. However, it is not yet well defined in international literature what such an OT intervention can consist of. This paper aims to explore opinions of experts on good practice for OT focusing on RTW in BC patients.

This will be studied in the Belgian context, where – unlike many other countries – no RTW support is provided in a structured and systematic way [16;33]. Since almost all BC patients are treated in the medical sector, integrating RTW support such as OT in medical treatment would be an excellent opportunity to reach the majority of patients. Flanders, the Dutch speaking part of Belgium has five University Hospitals with OT departments. The treatment of cancer patients now mainly focuses on the cancer itself, physical and psychological recovery. This explorative study addresses the following questions:

- What is the experts' experience with OT interventions for RTW?
- What is good practice regarding OT interventions in RTW for BC patients according to the experts?

3 METHOD

To describe and interpret expert opinions regarding RTW, a qualitative research approach is recommended in order to build up an understanding of the phenomena that help answer specific questions [34-36]. Data collection was done by semi-structured interviews with OT department heads. Additional information was gathered from focusgroup interviews with professionals in onco-rehabilitation (including OT).

3.1 Interviews with OT department heads

To prepare the interviews with the relevant heads of OT departments, literature was studied [31;37-43] and a worldwide expert on OT and RTW was interviewed [44]. Semi-structured interviews were held using the following topics:

- The current situation of OT rehabilitation practice in Flanders
- Elements that support or hinder OT, especially regarding RTW
- Knowledge, models, instruments to deliver OT services aimed at RTW
- Elements to determine "good practice" in OT when RTW is a therapeutic goal
- Input of OT within the multidisciplinary team (regarding RTW)
- Experience in oncological rehabilitation globally and more specifically regarding RTW
- The input of OT on behalf of RTW for BC patients

The interviews lasted for circa 150 minutes and started with an introduction by the researcher on the aims of the study for which the interview was organised, on the practical organisation of the interview and on the processing of the information they would provide. Two OT department heads had been considering the subject in advance using the topic list that was send to them by mail. They did prepare written notes. For practical reasons, one OT head was interviewed individually.

3.2 Sample of heads of OT departments

All heads of OT departments in University Hospitals in Flanders with experience in RTW participated in the topic interviews (full field coverage). They had 21 to 32 years of experience as OT. One OT head was asked to participate because of the outpatient experience she had at the OT service in a (non-University) rehabilitation centre, involved in RTW research for patients with chronic problems.

Table 1: Characteristics of OT department heads

	Workplace	Years of work-experience	Field of expertise
C.C.	University Hospital	30	Adult physical rehabilitation
J.V	University Hospital	32	Adult physical & cognitive rehabilitation
M.D.	Rehabilitation centre	32	Chronic illness in adults
B.S.	Univ. Rehabilitation centre	21	Neuro-rehabilitation in adults

The OT department heads were contacted and asked to participate using the professional organisation of occupational therapists in Flanders (V.E. Vlaams Ergotherapeutenverbond) of which they all are member, likewise the researcher. The interviews took place between May 2008 and September 2009. Interviews were held in University Rehabilitation centres in Flanders and organised in small groups. This enabled them to reflect on each other's statements, so that as much detailed information as possible could be retrieved. One interview was organised separately due to unexpected changes in the time schedule.

Although BC patients are on the moment only administered to the services these two OT-experts are working when secondary functional problems occur, they also referred during the interviews to experiences they had in their personal situation with people suffering from breast-cancer, claiming their support when return to work was discussed.

All interviews were digitally recorded with the agreement of the participating OT department heads and the researcher used written notes in addition. They agreed on reflecting on the results of the written text of the interviews and to answer additional questions in order to clarify eventual discrepancies in their statements.

3.3 Focus groups interviews with stakeholders

In order to collect additional information on opinions of other stakeholders caring for BC patients, participants of a multidisciplinary seminar on RTW for BC patients were asked to share their ideas and clarify their experience in working with BC patients and oncologic rehabilitation. This seminar took place on March 25 2011.

Moderation of the four discussion groups was performed by well-trained professionals, teachers or researchers at the OT department of the University College of Hasselt. Detailed and previously rehearsed, written moderator instructions on content and duration of the focus-discussion sessions (one and a half hours) were provided. The themes discussed were the participants' opinions on/experience with:

- Oncologic rehabilitation including RTW if provided;
- The presence or absence of an OT in their team;
- Barriers and facilitators regarding oncologic rehabilitation in Belgium (Flanders);
- Oncologic rehabilitation teams delivering answers to specific patient needs (including RTW).

3.4 Sample of focusgroup members

Forty-one professional caregivers from eight different disciplines attending the seminar agreed to be members of four focus groups. At registration participants were divided into multidisciplinary groups. Due to transport problems, 24 of the 65 participants of the seminar who agreed to attend the focus groups had to leave earlier than expected, leaving the groups with unintended, uneven representation of disciplines. Participants' characteristics are presented in table 2.

Table 2: Characteristics of focus group members (disciplines and numbers)

	Profession							
Number	**OT**	**PT**	**Psy**	**Phys**	**Nurse**	**SW**	**Research**	**Others***
11	3	1	1		1	1		4
11					5	1	3	2
9	1	1			3			4
10	2	2	2	1	1			2
TOTAL								
41	**6**	**4**	**3**	**1**	**10**	**2**	**3**	**12**

Legend: OT = occupational therapist, PT = physical therapist, Psy = psychologist, Phys = physician, SW = social worker

* : others = employers, people working in patient administration and/or staff members at oncological care centres who were not involved in the multidisciplinary teamwork

The physician who participated was a rehabilitation physician working with oncology patients. Two of the participants in the focus groups spontaneously revealed being BC patients themselves, thereby adding patient experiences to the discussion. The focus group discussions were digitally recorded, and well-trained minutes secretaries were present to note down additional information. Both records (digital and written) were used for the verbatim transcription of the focus group sessions.

3.5 Analysis

The interviews with the OT department heads were used as a primary data source. Coding the data and construction of the conclusions was performed by two researchers (HD and AdR). The data was analysed by thematic analysis on a fragment or sentence level to construct a well-detailed view of the different aspects themselves and of the relationships between those aspects (Berg 2004; Boeije 2010). By using mindmaps (Free-Mind), expressions from the interviews were interpreted in their context and combined to form specific themes that emerged from reading the transcriptions of the interviews [45]. Expert-review was used to guarantee the quality of the formulated conclusions. Points of agreement and elements of differences in opinion in the OT department heads statements were disclosed and interpreted by HD and AdR. The results of the focus group discussion were used as a secondary data source. Transcribed texts of the contribution of the group discussion were analysed and interpreted in their context. These interpretations were compared with to the themes that had emerged from the interviews with OT department heads. This led to some new themes or alterations.

4 RESULTS

When elaborating the information from the expert interviews and the additional input from the focus group discussion five main themes were identified. Convinced of importance of RTW but having little experience with RTW was the overarching theme. The other four themes were: RTW support linked to core elements of OT; specific OT components for RTW; legitimacy of OT support for RTW in BC patients and facilitators and barriers in OT support for RTW in BC patients.

All five themes are presented below.

4.1 Convinced of importance of RTW but little experience with RTW

The OT department heads strongly emphasise the importance of RTW, regardless of the diagnosed problems that prevent patients from maintaining participation in a social and professional life.

> *" so to say,..; from day one of the contact between patient and occupational therapist, it is important to discuss with him what his job is, what possibilities are available in rehabilitation to help him maintain of restore work…. "(C434)*

The members of the focus groups agree on the importance of assisting BC patients in maintaining contact with their roles in daily life

> *"…. a lot of attention in care is paid to physical rehabilitation and psychological support. Many patients are left at themselves regarding other life issues, financial consequences of working or not working…. in fact a complete social framework of care should be put at work from the very beginning on…" (FgH 69)*

They feel that the focus on the "patient role" during rehabilitation is not beneficial for restoring participation.

> *"…a patient stated" my rehabilitation finally started for real on the moment I started to work again… " (FgA 41)*

OT department heads hypothesise on RTW based on their professional experience with other patient groups and their personal experience with BC patients. They think that for BC patients in particular; psychosocial care needs to be taken into account, even when the complaints of those patients are mostly expressed in terms of physical problems. They indicate that paying attention to psychosocial aspects in patient care is an element of good OT practice as well.

> *"Because, thinking about BC, psychosocial support, also at home will surely be important…*" (C1504)

Because they have little systematic experience with RTW in BC patients, the OT department heads base their opinion on experiences with friends and family members, diagnosed with BC.

> *"my sister-in-law suffers from BC, .."* (B1444)

> *" .. a friend of mine has BC…"* (J1440)

When referring to those experiences, combined with the work they do for other patient populations, OT department heads hypothesise on the role of OT in rehabilitation and RTW for BC patients.

> *"I happen to know a person suffering from BC; she is strongly focused on her career and for her RTW is extremely important "(*C1555)

Also the health care professionals in the focus groups also express little experience with RTW in BC.

> *"… caregivers see a lot of BCpatients whose main focus is on recovering and surviving,… RTW is not – yet – systematic included in the program we can offer… (FgK24)*

All thus agree on the importance of RTW support for BC patients from health care. While this was a general opinion of the focus group members, the OT department heads strongly built their arguments on the core elements of OT, which will be addressed in the next section.

In the OT department heads' opinion, this support in RTW is naturally linked to the core elements of OT: (1) integrated care, (2) holistic and client-centred approach and (3) multidisciplinary teamwork. They advocate that, from the very start of the treatment process, all patients should get help to maintain all their life roles.

> *"The starting point of OT is the therapist's interest in his patient's life situation … in the end, the patient himself has to express his needs; it is almost like negotiating*" (M1366)

> *" I do think that early therapy is essential,… one of the first questions we ask patients is 'what is your job?'…"* (C687)

For the OT department heads, it is obvious that the actions of therapists involved in the rehabilitation programme need to be adjusted to the needs of the patient and to his specific situation.

> *"…The only thing we can do is… implement these therapeutic actions in the nomenclature we are obliged to use. That includes work hardening, pre-job training. And OT is a part of that pre-professional guidance program."* (R15)

All experts agree on the statement that support on RTW is needed but they all regret that adequate response to these patients' needs is not available at date.

Integrated care

OT department heads feel that implementing a holistic point of view in an integrated care system, realised by a team, is essential to OT. Both integration of care delivered to the patient and integration of the care delivery through multidisciplinary teamwork are regarded as essential. According to the heads, for all of the team members, but especially for the occupational therapist, the "participation level" of the ICF should be the ultimate aim in an integrated approach to therapeutic interventions.

> "*These days, participation is increasingly looked at, by the whole team, referring to ICF "* (R390)

In other words, health care is not only responsible for curing the medical problem, but also for the restoring the patient's participation in society.

Holistic and client-centred approach

According to the OT department heads, such integrated care needs to be founded on a holistic and client-centred approach. This is achieved when not only the physical needs of the patients are taken into account, but all the elements (e.g. psychological, emotional, social, cognitive, relational) that go to make up the quality of life as well.

> *"…We try to treat the patient as a whole person…"* (R388)

The OT department heads refer to the ICF as a framework that facilitates such a holistic approach.

> *"… it is good to have a common frame of reference…"* (M1146)

For all the OT department heads interviewed, an in depth knowledge of the values, motivation and habits of the patient is of primary importance for the success of a rehabilitation programme, regardless of their medical problem. They therefore stress the importance of a broad and yet detailed intake in order to construct a clear knowledge of the patients' situation, norms, values, habituations activities and participation.

> *"…a good OT intervention is, of course, recognisable by the broad intake that is used (…) what is the attitude of the patient regarding RTW ?"* (R186)

Multidisciplinary teamwork

In the OT department heads' opinion, good OT practice requires delivery of OT service as part of a multidisciplinary team including the patient, therapists, nurses and medical doctors (primary stakeholders in the rehabilitation process).

> *"it is precisely that combination that is needed, the view of the employee on RTW combined with the opinion of the employer …"(*B772)

The OT department heads stress the importance of enabling the team to answer specific patients' needs. Regarding RTW, OT can "translate" medical issues into work-related actions by clarifying the consequences of medical problems in relation to specific actions at the work place. The occupational therapist can assist patients in implementing new ways of "doing" by questioning the patients' habits, their way of doing things at the workplace.

> *"In an acute phase, more frequent input of advice from the occupational therapist might be useful (…) for showing how a patient could progressively resume his activities".* (R412)

Also for the focus group members, it is clear that quality of care for BC patients in assisting them to restore their quality of life (including RTW) needs to be delivered by a multidisciplinary team.

> *"RTW should be looked at from the point of view of different domains and disciplines "* (FGk118)

According to the experts, RTW is an objective for primary and secondary stakeholders with the occupational therapist as the coach in a participation-focused process.

> *"OT can provide the patient with an overview, acting as an intermediary between all the different disciplines"(*FGa60)

4.2 Specific OT components for RTW

Additionally to the core elements of OT mentioned above, all experts address together three components that are important for an OT intervention to support RTW in BC patients. Two of these are not specific for OT as such but are mentioned due to importance the experts award, regardless of the professional discipline involved.

Early intervention

The experts agree that an RTW process should start systematically from the moment a patient is admitted, aiming on restoring abilities, activities and participation. It should always consist of informing the patient and other stakeholders about the final goal of treatment and rehabilitation, i.e. restoring social and professional participation,.

> *"… I often suggest other therapists in our team, to start – from the first contact on – to discuss what the patients' work consists of, to focus on his abilities in the therapeutic process…."(*M429)

> "*offering service on RTW could be discussed early in the treatment program, maybe at the diagnosis stage, before surgery (focus on abilities, recognizing potential safety risks dis-abilities can include,…). Apparently, there is a big need for advice regarding RTW and work resumption and there are clearly a lot of concerns on that matter "(*FGk30)

Activities that are linked to RTW should thus be included in the treatment and rehabilitation process as soon as possible.

Importance of workplace visit

According to the experts, an OT program as part of the care provided, should be focused on (restoring) participation at professional level. It is seen as a specific concern of OT to detect and resolve problems that (could) hinder patients in activities that are essential/ important for participation.

> *"… one should go to the workplace, and observe what is going on there, and give advice; sometimes patients call for this* "(C301)
> *"I assume that the occupational therapist is focusing specifically on RTW and the labour market* "(FGh101)

The OT department heads indicate the necessity of a workplace visit to enable the occupational therapist to have a good view of the occupation (the specific activities) of the patient.

> "*… a workplace visit could be organised to observe the feasibility of a workplace adaptation in relation to the client (…); consultation with the employer is therefore necessary*" (R232)

Goal setting

Goal-setting for a therapeutic intervention is not specific for OT, but to do so together with the patient and keeping social and professional participation in society as final focus. Answering the patients' needs requires careful composition of the OT intervention since restoring participation is one of the main goals of OT.

> *"…In my practice, the aim is – most of the time – to preserve the job…"* (J462)

> *"… goal-setting.. in order to enable patients to be functioning again in a very broad field of their daily living, including work of course…"(C243)*

This requires goal setting with sub-goals, something that is not always straightforward for patients.

> "… *RTW is the ultimate goal, but sub-goals can be introduced and be included in the final goal setting of the total rehabilitation program; that is something the clients themselves must experience…"* (R515)

The OT head indicate that for them, including work as part of the final goal setting process is an obvious part of the role of OT in the rehabilitation setting.

4.3 Legitimacy of OT support for RTW in BC patients

In the above, the OT department heads clearly refer to the professional domain of OT when considering an OT intervention to support RTW in BC patients, but the specific contribution of an occupational therapist was not so obvious for all stakeholders. OT department heads are also aware of a lack of legitimacy of occupational therapists. Although all agree on the importance of RTW support for BC patients, whether an occupational therapist should offer this, remains a point of discussion. Seven arguments were given to legitimate the role of an occupational therapists in RTW of BC patients.

First, the frustration that echoes throughout the OT department heads' statements concerns the importance they award to meeting patients' needs. The OT department heads assume that in an integrated, multidisciplinary team, achieving the patients' goals must be the basis for all team members but especially for OT.

> *"For me, the occupational therapist is a catalyst,… he's the person to collaborate with to reach the goal (RTW) that was agreed upon"* (M1368)

Focus group members refer to the positive response they encountered when their team (including OT) was able to intervene at the point of discharge and could assist RTW. Those experiences founded their conviction that the occupational therapist is a facilitator when RTW is at stake. They want an occupational therapist to reinforce the capacities of the whole team in delivering good quality care when RTW is one of the patient's goals.

Second, the OT department heads are convinced that an important skill of the occupational therapist is to be able to observe the patient and his actions, preferably in his own, normal situation. The focus group members also indicate that in the context of the RTW process, the team needs to be aware of and prepared for difficulties patients face in daily life, and that this specific awareness – aiming on trouble prevention – should be part of the input of OT.

> "*That is indeed what one experiences (…), the ability to analyse the situation, to analyse an action*" (J370)

> *"… a clear need-assessment an care-indication must be put to use. Every necessary specialist must be included."* (FgH164)

Third, the liaison that the experts advocate for, has an important place in coordinating the proposed integrated service. The experts also agree on the statement that occupational therapists have specific competences that are beneficial in the RTW process.

> "*the occupational therapist has an important role in informing, advising and motivating the client, from the very beginning of the rehab process .."* (C2126)

> *"I expect the occupational therapist to focus mainly on re-integration and work problems"* (FGh101)

They argue that a case manager is needed to find the answers to vocational rehabilitation problems and *that OT can take that role.*

> *"The patient needs a case manager who will help them to look for the right care provider. So he will not be overwhelmed by different disciplines* "(FGa61)

Fourth, a problem, directly related to RTW, is the shift from "patient" to "participant in society". Focus groups suggest that awareness of this problem might facilitate the implementation of OT, as it seems obvious that occupational therapists are well-suited to support this.

> *" the occupational therapist should deliver vocational guidance, be the liaison to enable return to work…"* (FGd327)

Fifth, the OT department heads indicate that an experienced occupational therapist is necessary because analysing a worker' occupation in the workplace can be very complex.

> "*The person providing that type of guidance must be someone with proven experience"* (B1085)

Sixth, OT department heads highlight the importance of restoring/maintaining quality of life by restoring/maintaining functionality. Based on the Experts' agreement that these issues are part of the core of OT, rehabilitation and RTW should both be part of the OT intervention.

"For instance, we do practical exercises (…) the exercises are task-specific, related to the work they do (…) but one is never able to re-enact the work environment as such, and very often it is the environment and the internal work organisation that are the deciding factors" (B393)

"Because I was working, my rehabilitation process was successful" (FGa41)

Seventh, in the opinion of the OT department heads it could be beneficial for society and for individuals to include an OT guided RTW-process in a structured rehabilitation service for patients at risk for long-term or permanent sick leave.

"… if you look at the situation from a global point of view, enormous opportunities are lost, because people are not assisted, or not even allowed, to receive OT" (C609)

In addition to discussing the role of the occupational therapist, the feasibility of RTW support for BC patients is a point of discussion. This will be addressed next.

4.4 Barriers and Facilitators in OT support for RTW in BC patients

The six barriers and two facilitators that emerged, are mentioned.

First, the experts indicate a lack of awareness of the importance of RTW in the rehabilitation of all patients who are confronted with chronic problems, including BC patients.

*"These days patients really do want to start working, (…) so people are obliged to stay at home …."(*FGd90)

Second, according to the OT department heads, the health care organisation and the financial issues are important barriers that limit the implementation of OT (e.g. at the workplace) . OT department heads firmly indicate the lack of financial support for out-patient care as an obstacle to satisfy patients' needs, not only because of the costs that patients need to pay themselves, but also the lack of investment (by government) in the care provided.

*" . the financial convention does not allow us to offer BC patients rehabilitation …"(*R444)

Third, the OT department heads indicate the lack of integrated care as one of the barriers to RTW and the implementation of OT in rehabilitation aimed at restoring participation.

*"Actually, we are forced to work by the rules of the nomenclature that dictates what we are allowed to do, what is not allowed; what we have to do is not what we would like to do, so we get desperately stuck…"(*C125)

Fourth, the experts agree that health care administration is often too complicated for patients to claim the services they are entitled to which is as such a significant barrier.

"The burden of administration is high, so breast cancer patients need to be extra motivated to resolve all those issues" (FGd96)

"Administrative complications mitigate the possibility for patients to combine treatment and work" (FGd415)

Fifth, the lack of experience they have regarding RTW in BC patients, is indicated by the experts as a barrier. Specifying they have knowledge on RTW, the participants state they don't have enough opportunities to implement that knowledge on a group of patients of which they think – based on the few experiences they have- to be in need of support in RTW.

"…I have too little knowledge about breast cancer patients to be able to express myself now on the need for support in RTW." (C2328)

Sixth, the OT department heads further mention financial conventions between the social insurance institute and certain rehabilitation centres to facilitate assistance with RTW (including OT) for certain patient groups, but not for BC patients.

Regarding the facilitators, the OT department heads indicate the clear benefit they expect for their clients regarding (social and professional) participation and perceived quality of life in such a system.

"…and then we have the convention seven-seventy-one which means that one can offer five hours of multidisciplinary treatment a day to the patient" (B165)

"… we implement these things within the nomenclature we have,… OT is a part of that pre-professional guidance" (R18)

OT department heads refer to the use of specific OT models with a multi-disciplined focus and to assessment instruments, implemented to facilitate good therapeutic practice.

"Actually, the Model of Human Occupation (MOHO) has been the foundation of my work as an occupational therapist" (B978)

"We make use of the Canadian Occupational Performance Measure (COPM) whenever we feel that motivational problems might occur." (R382)

5 DISCUSSION

Five OT department heads and forty-one health care professionals working in onco-care, participated in interviews and focus groups discussions. Using that information, this paper aims to explore their experience with; and their opinions on OT interventions for RTW in BC patients.

5.1 Importance of RTW support

The scarce experience the participants have on RTW in BC does prop up the conviction they have on the importance of a structured RTW support for these patients. This is supported by several authors who also advocate that return-to-work interventions for breast cancer survivors should be further developed and evaluated [39;46;47].

The experts agreed on the necessity to meet BC patients' needs regarding RTW. Their indication for the advantage for patients to be able to benefit of a liaison between health care and the work environment is also supported by international research results [24;48-52]. Research supports the experts' conviction on the necessity to provide systematic RTW support for BC patients, but the results do not indicate which specific health care profession would be preferable to do so [19;53].

The results of this study indicate that the OT department heads – partially supported by the opinions of the focus group members – find that RTW should imperatively be a part of structural support provided by health care services. This opinion is supported by research results in different countries [17;19;39;40;54-57]. The OT department heads'opinion is also in line with the statement of Steiner et al, which recommends further research on the work outcomes of cancer to mitigate the economic impact of this disease and to improve the quality of life of cancer patients (Steiner et al. 2004).

Focus group members and OT department heads were convinced that OT could play an important role in RTW. They differ, however, in their opinion on the exclusivity of OT when assisting RTW, as RTW is seen as integrated support delivered by a multidisciplinary team.

5.2 OT interventions in RTW for BC patients

The OT department heads were convinced that an OT intervention aiming at RTW could easily integrated in the current rehabilitation programme. They therefore referred to their experience with other patient populations. This is supported by the review of Désiron et al., that found evidence for positive effects of an OT intervention in RTW guidance of diverse patients groups [31]. The added value of OT to current rehabilitation programs offered to BC patients is based on the broad knowledge of this paramedic discipline, with a focus on combining medical issues of the patient to practical elements in the workplace in order to restore "the act of doing" in daily life, leisure and work. [14]

OT department heads' opinions indicate that OT interventions might expand the current focus on psychological care offered to BC patients by enhancing focus on activity and participation. These aspects are important elements of the ICF-model that regards personal, professional and societal aspects, hereby aligning with literature. More specifically, good OT practice in RTW service for BC patients has specific characteristics:

1. An integrated, holistic, client centred OT approach should be embedded in multidisciplinary teamwork, including psychosocial care, with the patient in the lead when goal setting is at stake. .[14]. The OT intervention should engage all stakeholders to explore and optimise RTW as it is set up according to the client's evolution combined with respecting the specific legislation and occupational hazards [12;22;55;58;59].

2. An early intervention is important. From the very start of the rehabilitation process, even from the moment of diagnosis, OT should be available for the BC patient, based on a broad intake and consisting of informing and assisting stakeholders in maintaining occupation in all life domains in which "the act of doing" is threatened (either by physical, emotional, psychological, social or other elements) . In this qualitative inquiry, the participants did not go into detail about the exact moment (during treatment or afterwards) patients should have access to OT. They find this should be "as soon as possible" and "on the moment the patient indicates to be ready to do so", hereby indicating the high value of patient-involvement in goal setting during the period of treatment and rehabilitation. Taminga et al also stress on the need for an early start to enhance results of RTW interventions, without being more precise on the timing or an exact moment in the treatment process: "*An early intervention – meaning soon after diagnosis or early in treatment - is most appropriate because the longer the duration of sick leave, the more difficult return-to-work is to achieve* [[60]. This also aligns with findings of Peterson et al, who conclude that shortly after breast cancer surgery, most women valued work highly, even as one of the most important things in their lives. Accordingly, it is essential to include aspects of work early on in these patients' treatment and rehabilitation plans [61]

3. An OT-guided RTW process must involve workplace visits. This includes well-effectuated observations of the client's work situation, involving primary and secondary stakeholders The professional competences of the occupational therapist need to correspond to those of the "case manager" or "liaison", which is assumed necessary in the RTW process. The participants hereby indicate they experience a need to assist patients to (1) bridge the gap between the patient-role and other roles patients have (partner, parent, worker, colleague,…) and (2) to assist the RTW process by bridging the distance between stakeholders. Research findings support the importance of bridging this gap and improving workplace support, in which visiting the workplace is an essential part. [18-20;23;24;48;57;62]. Workplace visits appear to be a key factor in facilitating RTW for

chronic back pain patients [63;64]. As indicated by the experts, this enables caregivers to assist employee and employer to set up an RTW programme that will suit all stakeholders. In the "cancer and work" model [65] workplace visits are included. Meeting the patients' needs requires careful construction of the OT intervention, since restoring participation is one of the main targets of OT. (desiron[12-14;48].

4. Participative goal setting is essential. All stakeholders should focus on "abilities" of the client and on how these can be preserved or restored by training and devices [66]. Recent literature also underlines that the goals must be linked to the total quality of life of adult patients and the patients need to be involved in the definition of their goals [67]. This goal-setting is the starting point of a work rehabilitation process in which the contribution of OT consists of different elements [68;69]. 1)assessment of the patient's abilities, the contextual factors (personal and environmental) that can have impact on RTW; 2) professional reasoning to determine whether the usual work and the current abilities of the patient can be matched, this includes workplace visits, job analysis, propositions on workplace adjustments, re-organising work, and consulting all stakeholders etc. 3) developing interventions, including work conditioning and work hardening in a tailor made program , involving all stakeholders and taking – if necessary – into account that looking for a new job may be relevant and 4) implementing the programme, monitoring, measuring outcomes and reviewing.

5.3 Facilitators and barriers

Including an OT intervention in the health care offered to BC patients and assisting them in RTW, would facilitate the transition process from patient to survivor. An occupational therapist is by education an excellent health care professional to bridge the gap between health care and employer. OT interventions are not yet a systematic part of RTW rehabilitation despite positive effects on RTW rates (Désiron et al. 2011). Since RTW support in health care is not covered by social insurance nor by private health care insurance, the experts argumented for a change in financial agreements: systematic support regarding RTW should be embedded in the health care system.

As in other countries with a social insurance system that is oriented towards protection, the Belgian system however inhibits the implementation of a – clearly needed - work-focused intervention [20;33;70]. Recognition at societal level of the necessity of RTW support is an important prerequisite (Organisation for Economic Co-operation and Development, 2010) that is now being recognized increasingly in Belgium [20].

For the experts, barriers that need to be brought down are the un-adapted access for BC patients to rehabilitation facilities (available for other patient groups), and the financial organisation of care.

Further, occupational therapist might need more education. Occupational therapist have the skills to deliver support in RTW in other patient groups, but even so, the experts indicate that the lack of experience and knowledge in the specific area of RTW in BC, and this might endanger the implementation of the occupational therapist as a useful member in the onco-team.

5.4 Methodological issues

Even with a sample covering the participation of occupational therapists from all University Hospitals in Flanders, supplemented with the input of an occupational therapist who is highly experienced in supporting participation (including RTW), the number of participants in the interviews with OT department heads is limited.

The fact that recruitment for the focus groups was part of a seminar on RTW for BC patients facilitated the organisation, but increased the risk for selection bias towards more positive opinions regarding RTW support, but not per se regarding OT. Nevertheless, the results of this study are in line with research findings in other countries [25;39;40;71-74]) .

6 CONCLUSIONS

This paper explored expert's opinions regarding an OT intervention to support RTW in BC patients since these patients are not having access to this therapeutic support in a systematic organised way.

In the opinion of the experts, RTW is an essential part of rehabilitation of BC patients that should be offered to patients as an integrated part of health care. They also indicate that OT can be beneficial in supporting patients to proceed their transition from patients to survivors, restoring their labour participation. To do so

1. OT should be part of an integrated, holistic and client-centred approach; in a legal and societal environment that supports RTW
2. OT services are to be embedded in a multi-disciplinary setting, that includes psychosocial care;
3. OT services should available in the very early stage of the rehabilitation process of the BC patient;
4. Goal setting of the RTW process guided by OT should focus on abilities of the patient and linked to the total quality of life of patients; and
5. An OT guided RTW process must include workplace visits and observations of the patient's situation and include contact with all stakeholders.

There are good reasons to assign these tasks to an occupational therapist, but also other health care professionals cloud theoretically bridge the gap between health care and the work place. The specific competences of the occupational therapist should be additional to the competences of the whole team, strengthening the holistic, integrated and client-centred orientation of the health care services provided to BC patients.

7 ACKNOWLEDGMENT

The authors wish to thank prof. G. Kielhofner (†), as well as the OT department heads and focus group members that participated in this study.

In the period of time that the publication of these results was prepared, co-author prof. P. Donceel passed away. The authors wish to express their great respect and gratitude for the inspiring contribution he delivered to the results that are presented here.

8 REFERENCE LIST

(1) Jemal A, Bray F, Center MM, Ferlay J, Ward E, Forman D. Global cancer statistics. CA: A Cancer Journal for Clinicians 2011;n/a.

(2) Neyt M, Albrecht JA. The long-term evolution of QoL for disease-free breast cancer survivors : A comparative study in Belgium. Journal of psychosocial oncology 2006;24(3):89-123.

(3) Tiedtke C, Dierckx de Casterlé B, de Rijk A, Christiaens MR, Donceel P. Breast cancer treatment and work disability: patient perspectives. Breast 2011;20(6):534-8.

(4) Renard F, Van Eycken L, Arbyn M. High burden of breast cancer in Belgium: recent trends in incidence (1999-2006) and historical trends in mortality (1954-2006). 2011. Report No.: 69.

(5) Mehnert A. Employment and work related issues in cancer survivors. critical reviews in oncology/hematology 2011;2011(77):109-30.

(6) Bouknight RR, Bradley CJ, Luo Z. Correlates of return to work for breast cancer survivors. journal of clinical oncology 2006;24(3):345-53.

(7) Drolet M, Maunsell E, Brisson J, Brisson C, Masse B, Deschenes L. Not working 3 years after breast cancer: predictors in a population-based study. J Clin Oncol 2005 Nov 20;23(33):8305-12.

(8) Feuerstein M. Cancer survivorship and work. Journal of Occupational Rehabilitation 2005 Mar;15(1):1-2.

(9) Johnsson A, Fornander T, Rutoqvist LE, Olsson M. Factors influencing return to work: a narrative study of women treated for breast cancer. Eur J Cancer Care (Engl) 2010;19(3):317-23.

(10) Kärki A, Simonen R, Mälkiä E, Selfe J. Impairments, activity limitations and participation restrictions 6 an 12 months after breast cancer operation. J Rehabil Med 2004 Aug 30;2005(37):180-8.

(11) Fantoni SQ, Peugniez C, Duhamel A, Skrzypczak J, Frimat P, Leroyer A. Factors related to return to work by women with breast cancer in Northern France. Journal Occupational rehabilitation 2009 Nov 10.

(12) Steiner WA, Ryser L, Huber E, Uebelhart DAA, Stucki G. Use of the ICF Model as a clinical problem solving tool in physical therapy and rehabilitation medicine. Physical Therapy 2002 Nov;82(11):1098-107.

(13) Tompa E. A systematic review of disability management interventions with economic evaluations. J Occup Rehabil 2008;18(1):16-26.

(14) World Federation of Occupational Therapists. Aims of Occupational Therapy. http://www wfot org 2009(World Federation of Occupational Therapists)

(15) Tamminga SJ, De Boer AGEM, Verbeek JHAM, Frings-Dresen MHW. Return-to-work interventions into cancer care: a systematic review. Occup Environ Med 2010;67(9):639-48.

(16) Organisation for Economic Co-operation and Development. Sickness, disability and work Breaking the barriers A synthesis of findings across OECD countries. Paris, France: OECD publishing; 2010.

(17) Tamminga SJ. Enhancing return to work of cancer patients. Amsterdam: Faculty of Medicine of the University of Amsterdam (UvA); 2012.

(18) Hewitt M, Greenfield S, Stovall E. From Cancer Patient to Cancer Survivor: Lost in Transition. http://www nap edu/catalog php?record_id=11468 2005 [cited 2014 Feb 2];Available from: URL: http://www.nap.edu/openbook.php?record_id=11468

(19) Nachreiner NM. Successful return to work for cancer survivors. AAOHN J 2007;55(7):290-5.

(20) Pauwels E, Van Hoof E, Charlier C, Lechner L, Bourdeaudhuij I. Transition into survivorship. A qualitative study of breast cancer survivors' and intimate partners' experiences of the post-

treatment phase and preferences regarding on-line support. Ghent: Social Health Sciences, Ghent University & Psychological Sciences, Free University of Brussels; 2012.

(21) Alfano CM, Rowland JH. Recovery issues in cancer survivorship : a new challenge for supportive care. The Cancer Journal 2006;12:432-43.

(22) Haglund L, Henriksson C. Concepts in occupational therapy in relation to the ICF. Occup Ther Int 2003;10(4):253-68.

(23) Tiedtke C, Donceel P, Knops L, Désiron H, Dierckx de Casterlé B, de Rijk A. Supporting return-to-work in the face of legislation: stakeholders' experiences with return-to-work after breast cancer in Belgium. J Occup Rehabil 2012 Jun;22(2):241-51.

(24) Désiron H, Knippenberg E, Willems B, Claes G, Neerinckx E. Occupational therapy for breast cancer survivors: improving QOL by return-to-work assistance. 2008 p. 135-6.

(25) Crompton Se. Occupational therapy intervention in cancer. Guidance for professionals, managers and decision-makers. London: College of Occupational Therapists, HOPE: the Specialist Section of Occupational Therapists in HIV/AIDS, Oncology, Palliative Care and Education; 2004.

(26) Désiron H. Occupational therapy and return to work for breast cancer survivors. WFOT Bulletin 2010;61:45-51.

(27) Lattanzi JB, Giuliano S, Meehan C, Sander B, Wootten R, Zimmerman A. Recommendations for physical and occupational therapy practice from the perspective of clients undergoing therapy for breast cancer-related impairments. J Allied Health 2013;39(4):257-64.

(28) Silver JK, Gilchrist LS. Cancer Rehabilitation with a Focus on Evidence-Based Outpatient Physical and Occupational Therapy Interventions. American Journal of Physical Medicine & Rehabilitation 2011;90(5):S5-S15.

(29) Söderback I, Petterson I, Von Essen L, Stein F. Cancerpatients' and their physicians' perceptions of the formers' need for occupational therapy. Scandinavian journal of occupational therapy 2000 Mar 24;7:77-86.

(30) Vockins H. Occupational Therapy intervention with patients with breast cancer: a survey. Eur J Cancer Care (Engl) 2004;2004(13):45-52.

(31) Désiron HAM, de Rijk A, Van Hoof E, Donceel P. Occupational therapy and return to work: a systematic literature review. BMC Public Health 2011;2011(11):615.

(32) Hand C, Law M, McColl MA. Occupational therapy interventions for chronic diseases: A scoping review. American Journal of Occupational Therapy 2011;(65):428-36.

(33) Rommel W, Neefs H, Verhaegen H, Desplenter B. Werken na kanker: welke problemen ervaren (ex-)patiënten die het werk hervatten? Vlaamse Liga tegen Kanker; 2012. Report No.: September 2012.

(34) Berg BL. Qualitative Research Methods. Boston: Pearson Education; 2004.

(35) Carpenter C, Suto M. Qualitative research for Occupational and Physical therapists; a practical guide. Oxford: Blackwell Publishing; 2008.

(36) Ospina S. Qualitative Research. Goethals G, Sorenson G, Mac Gregor J, editors. 2004. London, Thousand Oaks CA, New Delhi, Robert F. Wagner Graduate School of Public Service New York University / SAGE Publications. Encyclopedia of Leadership. http://wagner.nyu.edu/leadership/publications/files/Qualitative_Research.pdf

(37) Adam K, Peters S, Chipchase L. Knowledge, skills and professional behaviours required by occupational therapist and physiotherapist beginning practitioners in work-related practice: a systematic review. australian occupational therapy journal 2013 Apr 31;60(2):76-84.

(38) Franche R. Workplace-based return-to-work interventions: a systematic review of the quantitative literature. Journal of Occupational Rehabilitation 2005 Dec 15;15(4):607-31.

(39) Hoving JL, Broekhuizen MLA, Frings-Dresen MHW. Return to work of breast cancer survivors: a systematic review of intervention studies. BMC Cancer 2009 Sep 21;9(117).

(40) Spelten ER, Sprangers MA, Verbeek JH. Factors reported to influence the return to work of cancer survivors: a literature review. psycho-oncology 2002 Mar;11(2):124-31.

(41) de Buck PDM. Vocational rehabilitation in patients with chronic rheumatic diseases: a systematic literature review. Seminars in Arthritis & Rheumatism 2002 Dec;32(3):196-203.

(42) Kuijer W. Prediction of sickness absence in patients with chronic low back pain: a systematic review. Journal of Occupational Rehabilitation 2006 Sep 16;16(3):439-67.

(43) Peters J. Predictors of delayed return to work or job loss with respiratory ill-health: a systematic review. Journal of Occupational Rehabilitation 2007 Jun 17;17(2):317-26.

(44) Kielhofner G. topic interview "OT and RTW for breastcancerpatients". 25-11-2009. Ref Type: Personal Communication

(45) Boeije H. Analysis in Qualitative Research. London: Sage Publications; 2010.

(46) Amir Z, Moran T, Walsh L, Iddenden R, Luker K. Return to paid work after cancer : a British experience. J Cancer Surviv 2007;1:129-36.

(47) Amir Z, Brockly J. cancer survivorship and employment. Occupational Medicine 2009;59:373-7.

(48) Wressle E, Eeg-Olofsson A-M, Marcusson J, Henriksson C. Improved client participation in the rehabiliation process using an client-centred goal formulation structure. J Rehabil Med 2002;2002(34):5-11.

(49) Balak F. Return to work after early-stage breast cancer: a cohort study into the effects of treatment and cancer-related symptoms. Journal of Occupational Rehabilitation 2008;18(3):267-72.

(50) Hansen JA, Feuerstein M, Calvio LC, Olsen CH. Breast cancer survivors at work. J Occup Environ Med 2008;50:777-84.

(51) Mock V. Breast cancer and fatigue: issues for the workplace. AAOHN J 1998;46(9):425-3.

(52) Roelen CAM, Koopmans PC, van Rhenen W, Groothoff JW, van der Klink JJL, Bültmann U. Trends in return to work of breast cancer survivors. Breast Cancer Res Treat 2011; (128):237-42.

(53) Verbeek J, Spelten E. Work. In: Feuerstein M, editor. Handbook of Cancer Survivorship.Bethesda USA: Springer; 2007. p. 381-96.

(54) Bains M, Yarker J, Amir Z, Wynn P, Munir F. Helping cancer survivors return to work: what providers tell us about the challenges in assisting cancer patients with work questions. Journal of Occupational Rehabilitation 2011;22(1):71-7.

(55) Grunfeld EA. The organisational perspective on the return to work of employees following treatment for cancer. Journal of Occupational Rehabilitation 2008 Dec 18;18(4):381-8.

(56) Verbeek J, Spelten E, Kammeijer M, Sprangers M. Return to work of cancer survivors: a prospective cohort study into the quality of rehabilitation by occupational physicians. Occup Environ Med 2003 May;60(5):352-7.

(57) van Muijen P, Weevers NLEC, Snels IAK, Duijts SFA, Bruinvels DJ, Schellart AJM, et al. Predictors of return to work and employment in cancer survivors: a systematic review. Eur J Cancer Care (Engl) 2013 Mar 31;22(2):144-60.

(58) Leyshon RT, Shaw LE. Using the ICF as a conceptual framework to guide ergonomic intervention in occupational rehabilitation... International Classification of Functioning, Disability, and Health. work 2008 Mar 14;31(1):47-61.

(59) Schene AH, Koeter MWJ, Kikkert MJ, Swinkels JA, McCorne P. Adjuvant occupational therapy for work-related major depression works: randomized trial including economic evaluation. Psychol Med 2006 Nov 20;37:351-62.

(60) Tamminga SJ, Verbeek JHAM, Bos MMEM, Fons G, Kitzen JJEM, Plaisier PW, et al. Effectiveness of a Hospital-Based Work Support Intervention for Female Cancer Patients - A Multi-Centre Randomised Controlled Trial. PloS one 2013 May 22;8(5):63271.

(61) Petersson L-M, Nilsson MI, Alexanderson K, Olsson M, Wennman-Larsen A. How Do Women Value Work Shortly After Breast Cancer Surgery and Are Their Valuations Associated With Being on Sick Leave? Journal of Occupational Rehabilitation 2013;23(3):391-9.

(62) Désiron HAM, Donceel P, de Rijk A, Van Hoof E. A Conceptual-Practice Model for Occupational Therapy to Facilitate Return to Work in BC patients. Journal of Occupational Rehabilitation 2013 Feb 20;23(4):516-26.

(63) Karjalainen K. Multidisciplinary biopsychosocial rehabilitation for subacute low back pain among working age adults. Cochrane Database Syst Rev 2000;(3):CD002193.

(64) Steenstra IA, Anema JR, van Tulder MW, Bongers PM, de Vet HC, van Mechelen W. Economic evaluation of a multi-stage return to work program for workers on sick-leave due to low back pain. J Occup Rehabil 2006;16:557-78.

(65) Feuerstein M, Todd BL, Moskowitz MC, Bruns GL, Stoler MR, Nassif T, et al. Work in cancer survivors: a model for practice and research. J Cancer Survivor 2010;(4):415-37.

(66) White M, Wagner S, Schultz IZ, Murrayd E, Bradeley SM, Hsuf V, et al. Modifiable workplace risk factors contributing to workplace absence across health conditions: A stakeholder-centered best-evidence synthesis of systematic reviews. work 2013;2013(45):475-92.

(67) Cohn ES, Coster W. Unpacking our theoretical reasoning. In: Boyt Schell B.A., Gillen G, Scaffa ME, Cohn ES, editors. Willard and Spackan's Occupational Therapy, UNit IX occupational Performance theories of practice. 12 ed. Philadeplhia: Wolters KLuwer / Lippincott / William & Wilkins; 2014. p. 477-93.

(68) Rice VJ. Restoring competence for the worker role. In: Vining Radomski MV, Trombly Latham CA, editors. Occupational therapy for physical dysfunction. 7 ed. Philadelphia: Wolters KLuwer / Lippincott Williams & Wilkins; 2014. p. 870-908.

(69) Cook C, Lukersmith S. Work rehabilitation. In: Curtin M, Molineux M, Supyk-Mellson J, editors. Occupational therapy and physical dysfunction Enabling Occupation. 6 ed. Edingburgh: Churchill Livingstone Elsevier; 2010. p. 391-408.

(70) Tiedtke C, de Rijk A, Donceel P, Christiaens MR, Dierckx de Casterlé B. Survived but feeling vulnerable and insecure: a qualitative study of the mental preparation for RTW after breast cancer treatment. BMC Public Health 2012 Jul 23;2012(12):538.

(71) de Boer AGM, Taskila T, Tamminga S, Frings-Dresen M, Feuerstein M, Verbeek J. Interventions to enhance return-to-work for cancer patients. [The Cochrane Library]. 2009. The Cochrane, Library 2009, Issue 1, The Cochrane Collaboration. Published by JohnWiley & Sons, Ltd. 4-2-2011.http://onlinelibrary.wiley.com.kuleuven.ezproxy.kuleuven.be/doi/10.1002/14651858.CD007569.pub3/abstract

(72) Dilhuydy JM. La réinsertion professionnelle des patientes traitées pour un cancer du sein. Oncologie 2006 Mar 1;8(3):245-50.

(73) Feuerstein M. Recommendations for the U.S. National Occupational Research Agenda: research on cancer survivorship and musculoskeletal disorders and work disability. J Occup Rehabil 2006;16(1):1-5.

(74) Mehnert A, Härter M, Koch U. Langzeitfolgen einer Krebserkrankung Anforderungen an die Nachsorge und Rehabilitation. Bundesgesundheitsblatt - Gesundheitsforschung - Gesundheitsschutz 2012;55(4):509-15.

CHAPTER 4 : A CONCEPTUAL-PRACTICE MODEL FOR OCCUPATIONAL THERAPY TO FACILITATE RETURN TO WORK IN BC PATIENTS

Huguette A.M., Désiron, Peter Donceel, Angelique de Rijk, Elke Van Hoof

Journal of Occupational Rehabilitation 2013, 23, (4):516-526

1 ABSTRACT

Purpose: Improved therapies and early detection have significantly increased the number of surviving breast cancers (BC) patients, leading to increasing needs regarding return to work (RTW). Occupational Therapy (OT) interventions provide successful RTW assistance for other conditions, but have not been validated in BC. This paper aims to identify a theoretical framework for OT intervention in BC, by questioning how OT models can be used in OT interventions in RTW of BC patients; criteria need to be used to select these models and adaptations that would be necessary to match the OT model(s) to BC patients' needs?

Method: Using research specific criteria derived from OT literature (conceptual OT-model, multidisciplinary, ICF referred, RTW in BC,…) a search in 9 electronic databases was conducted to select articles that describe conceptual OT models. A content analysis of those models complying with at least two of the selection criteria was realised. Checking for BC specific issues, results were matched with literature of care-models regarding RTW in BC.

Results: From the nine models initially identified, three (CMOP, MOHO, PEOP) were selected based on the selection criteria. The MOHO had the highest compliance rate with the criteria. To enhance usability in BC, some adaptations are needed.

Conclusion: No OT model to facilitate RTW in BC could be identified, indicating a need to fill this gap. Individual and societal needs of BC patients can be answered by using a MOHO-based OT model that is extended with indications for better treatment, work-outcomes and longitudinal process factors.

Keywords: conceptual practice model, Model of Human Occupation, labour participation, return to work, occupational therapy.

2 BACKGROUND

Recent developments in the incidence, prevalence and treatment of breast cancer have created societal and individual challenges. Cancer is in some cases seen as a chronic illness with patients suffering physical and psychological symptoms years after treatment [1;2]. For an increasing number of women BC occurs at an age when they are still working and therefore has a substantial impact on their professional lives. Loss of employment after BC is frequent [3;4]. Since Belgium has one of the highest rates of BC in Europe [5], the number of BC patients who no longer participate in the labour market could become a challenge for society. Recent Belgian studies [6-9] indicate that BC patients suffer from many unmet needs, with high percentage scores for the topics of work, return to work and issues regarding social security. Research shows that, when compared with non-cancer groups, a high proportion of patients experienced, at least temporally, changes in work schedules, working hours and wages and a decline in work capability [4]. The cancer patients said they were given little advice from healthcare providers on how to manage their work during treatment or when to return after completing primary treatment [10]. Suggesting that it would help providers to offer more tailored advice to patients, Bains *et al*. [10] clarified the need for a systematic approach focussing on the impacts of cancer and its treatment on work capability and return to work.

Work has the potential to help patients regain a sense of normality, of being valued and helps them to find meaning in reintegration into society [11-13]. Returning to work can help cancer patients to regain confidence in their abilities and improve their quality of life [11]. Johnsson *et al*. [14] found that there was a need to design interventions targeted on the work environment of women treated for BC. Studies, however, are scarce, and those which are published, contain methodological problems, such as too few participants, a lack of controls and a poor account of what RTW involves.

Moreover, the different legal and health insurance systems in the various countries further hinder the comparability of the results, though the problems found in the public health services are not confined to any one country [1;5]. Even when in other research fields (e.g. Human resource management, well-being on the work place) methods like Disability Management are developed to assist RTW for people on sick-leave, the implementation of those methods regarding BC is not yet well established in Belgium [15-17].

In other chronic conditions, RCTs concerning OT interventions aimed at facilitating RTW, have shown promising results [18]. In patients with major depression, the addition of OT accelerates and increases work resumption [19]. OT has been shown to be cost effective for the RTW of patients with subacute and non-specific low-back pain in primary care [20]. Other research results, in several settings, indicate similar findings [21-24].

The literature shows that an intervention facilitating RTW in BC should be client-centred, involve a multi-disciplinary team, be ICF-based and should guarantee the use of evidence-based knowledge [25-27]. To enable the representation of this knowledge, conceptual practice models can be used, providing a theoretical framework for conceiving and implementing practice [11]. A conceptual practice model refers to a framework for explaining something of importance to occupational therapy practice and for providing resources such as assessments and intervention procedures to guide clinical practice. Such models offer 'theory that serves as a way of thinking about and doing practice'. OT literature often identifies two types of OT models thereby obliging researchers to decide what level of knowledge the model would require. Occupation-based models which have been called conceptual models or occupation-based frameworks do not provide guidelines for application in specific populations or for specific disabilities but attempt to explain why the profession works as it does. Practice-based models try to explain how things happen and provide assessment instruments to measure how an intervention can correct or reduce the impact of a disorder on the performance of an occupation [25;28]. Conceptual-practice models provide explanations for matters of practical concern, while also providing rationales and resources for practice [29]. A conceptual practice OT model focusing on RTW includes three components [29] : (1) Theory explaining important elements of practice, (2) Practice resources for application, (3) Research and evidence base for investigating and improving the theory and resources.

As used in this paper, a theoretical conceptual practice model will refer to a structured framework that consists of an interdisciplinary theoretical core made up of constructs derived from within the occupational therapy knowledge base. Such models articulate postulations about function, dysfunction, and change and provide technology for application (guidelines for client assessment and intervention) derived from within the occupational-therapy knowledge base [30;31]. This paper will examine existing OT models, in order to determine a model on which an OT intervention regarding RTW in BC patients can be founded. The main questions to be answered in this paper are:

i) Which OT models are described in the literature focusing on RTW?

ii) What model(s) can be used as a theoretical framework when setting up an OT intervention in the RTW of BC patients?

iii) When focusing on RTW in BC, what adaptations would be necessary to match the OT model(s) to this specific target group?

3 METHOD

Before the literature was searched, specific selection criteria were identified, in combination with the results of empiric work and results of studies effectuated in Belgium, concerning the –unmet- needs of BC patients [5;7;32-40]. Both specific OT characteristics and BC targeted elements were included in the search (see table 1).These criteria were discussed between HD en EVH and used as base for a literature search. Until September 2012, electronic databases (combined in the LIMO search engine of the KU Leuven: CINAHL; Cochrane Library; Embase; ERIC; Invert ;Ovid-sp; PsycInfo; Pubmed Entrez; Web of science) were examined for information on OT models. For the electronic search, the key-word "occupational therapy model" was used in combination with "conceptual model", "return to work", "breast-cancer" and "occupational therapy". All authors subsequently discussed on the search results.

To enable deciding what type of models were to be used, basic OT literature was searched by HD and, by using a SWOT-analysis, reported to the other authors of this paper [28-31;41-46]. Based on several deliberation sessions, the threshold of selection (apart from the indication of the OT model, at least one of the other criteria needed to be recognised) was established and discussed with all the authors. The results of the selection process were discussed during two discussion sessions with all authors in order to carefully verify these results (inter-rater reliability). In case of disagreement, the elements in the SWOT-analysis were used to base the decision upon leading to a well-defined set of criteria.

Scoring the selection criteria was done using "-" when the criterion was not presented in the model, "+/- " when the criterion was mentioned in the model but not elaborated and " +" when the criterion was explicitly elaborated in the model. The initial scoring was done by the first author, supervised by the last author and agreed upon by all the authors. Disagreement was managed by using more detailed information on the discussed model until agreement was reached by all authors.

In a second phase the criteria were used to base an in-depth content analysis upon, for those models that scored at least two "+" for the selection criteria. By using the defined selection criteria as bases for an "in depth" analysis of the selected OT models, the first author primary realized the content analysis, supervised by the last author. Final decisions were made by all authors, managing disagreement by referring to the selection criteria that were defined in the first phase.

Table 1 : Synthesis of criteria :

Criteria used for:		
Inclusion in the review	**Evaluation and scoring**	**Content analysis.**
conceptual OT model:	OT-model	focus on participation
• theory explaining important elements of practice	conceptual model (incl. labour participation)	focus on work/productivity
• practice resources of application	commonly used in adult rehabilitation	ICF- referred
• research and evidence base for investigating and improving theory and resources	Providing tools /instruments concerning RTW	scientifically approved validity
focus on RTW	RTW in BC patients as focus	assessment instruments included
theoretical background ICF referred	validated in (breast)cancer	
support multi-disciplinary intervention		
indication for planning (timing) of RTW assistance		
providing / referring toassessement instruments, focussing on BC		
model is kept up-to-date		
model demonstrate the use of a holistic approach		

4 RESULTS

The results of the literature search presented in table 2 show that neither OT models aiming on RTW in BC could be found, nor OT models aiming on RTW in cancer. Articles that describe OT models in combination with RTW [47;48] did not provide the information this study is looking for.

Analysis of the results of this search showed that elaborate description of conceptual OT models is not to be found in articles, in contrast to explanation of the use of these models in OT practice. Checking reference lists of articles providing information on conceptual OT models, directed the search to OT handbooks [28;29;41;42;44-46;49]. Nine conceptual OT models were detected. The models that emerged from the initial review are listed in Table 3 together with the criteria used to evaluate their usability in relation to RTW in BC patients.

Table 2: result of electronic search, combining search terms (until sept 2012)

OT	OTmodel	concep. model	RTW	BC	hits
x	x				**28**
x		x			**395**
x			x		**213**
x				x	**599**
x	x	x			**2**
x	x		x		**2**
x	x			x	**0**
x		x	x		**1**
x		x		x	**13**
x			x	x	**6**
x	x	x	x		**0**
x	x	x		x	**0**
x	x		x	x	**0**
x		x	x	x	**0**
x	x	x	x	x	**0**

Table 3: Evaluation of OT models conforming to the listed criteria

Criterion* **Model**	OT-model	conceptual model (incl. labour participation)	commonly used in adult rehabilitation	Providing tools / instruments concerning RTW	RTW in BC patients as focus	validated in (breast) cancer
CMOP	+	+	+	+/-	-	-
COGNITIVE DISABILITY	+	+/-	-	+	-	-
ECOLOGY OF HUMAN PERFORMANCE	+	-	+/-	-	-	-
HABIT TRAINER	+	+/-	+	-	-	-
M.O.H.O.	+	+	+	+	-	-
N.D.T.	+	-	+	+	-	-
OCCUPATIONAL BEHAVIOR MODEL	+	+/-	+/-	+/-	-	-
P.E.O.P.	+	+	+	-	-	-
PERSON /ENVIRONMENT/ OCCUPATION	+	+/-	+	-	-	-

*: - criterion is not presented in the model; +/- criterion is mentioned in the model but not elaborated; + criterion is explicitly elaborated in the model

4.1 What are the OT models described in the literature concerning RTW?

The nine OT- specific models selected, are hereby discussed in alphabetical order. .

Canadian Model of Occupational Performance

The Canadian Model of Occupational Performance (CMOP), developed by the Canadian Association of Occupational Therapy between 1980 and 1990, is a conceptual model that places the client at the centre of the occupational therapy process, with a clear focus on occupational performance. The interaction between the three components (person, occupation and environment) is crucial to the model, and keeping close to the goals set by the client is a basis for a therapeutic intervention [43;44]. Human occupation is divided into three categories (self-care, productivity and leisure), and therefore all human activities can be taken to fall within the sphere of OT services [43]. The Canadian Occupational Performance Measure (COPM) is developed as an assessment instrument to assist both the therapist and the client to set attainable goals and to collaborate in a step-by-step process to reach (or to adapt) these goals. Since 1997, the Occupational Performance Process Model (OPPM) has been developed as a guideline for client-centred and occupation-based practice within the CMOP.

Cognitive disability model

Based on the work of Piaget, the cognitive disability model is designed to deal with problems, such as the changes in ability to function that would have happened even in the absence of a disability, difficulties in learning abilities and the existence of chronic mental disorders. The main concepts of the model are related to cognitive levels, performance modes and activity analysis [28]. The model is designed to provide environmental compensation in daily life for people with severe cognitive and mental disorders. Therapists are expected to know how to help patients to find alternative strategies for managing disability. Using the model, occupational therapists can influence the client's ability to engage in occupations using instructions and cues, assisting by adapting the environment.

Assessment involves the use of the Allen Cognitive Level Screen (ACLS), the Lager Allen Cognitive Level Screen and, for assessment of activities in daily life, the Routine Task Inventory has been developed [43].

Ecology of human performance

The ecology of human performance is designed to be a practice framework, to be used by various disciplines and not just occupational therapists. Its conceptual emphasis is on the role of the person's environment and how these ecological features affect the person and his/her task performance [43]. The major assumption of the Ecology of Human performance model, is that human behaviour or performance can be best understood by examining the relations between the environment, the person

and the task. Dunn, Brown an McGuigan therefore define the person, the environment and the task together with their relationship to human performance as the major concepts of their model [28]. By integrating the nature of the environment, the person's skills and abilities and the specific task, performance can be evaluated and recommendations for change can be suggested.

Five types of intervention have been outlined according to these concepts to create a practice model. No specific assessment tools have been developed to make a direct measurement of the concepts in this model [28].

Habit trainer

Habit trainer is the oldest model in OT practice; it was developed in 1922 by Meyer and Slagle [28;42;44]. One of the model's assumptions is the idea that life should be simplified and become as routine as possible. Another important idea on which the model was based, is the idea that disorganized habits are a major cause of behavioural problems. The authors of the model believed that disorders resulted from disorganized living habits. Using the model, therapists expected their clients to organize or reorganize their lives according to a schedule and to do what was expected of them according to the scheduled event or task. The model focused on organizing the tasks of daily living into a time schedule, including all aspects of daily living (productive occupations as well as self-care and leisure). Even though the term "habit training" is no longer used today, almost all treatment centres provide a basic schedule of activities or "things to do" for the patients involved. As they improve, the schedule is modified to provide more individualized activities, of which work resumption can be part [43].

Model of Human Occupation

The Model of Human Occupation (MOHO), founded by Kielhofner in 1980 and which is still being developed, is defined as a set of evolving theoretical arguments that are translated into a specific technology for practice and are refined and tested through research. The MOHO emphasizes that through therapy, people are helped to engage in occupational behaviour that maintains, restores, reorganizes, or develops their abilities, motives and lifestyle [43]. The human system is assumed to be a dynamic, changing, open system that interacts with the environment according to an analysis of the volitional, habituation and mind-body subsystems. The MOHO emphasizes that the occupational therapist must understand the physical and social environments in which the patient's occupation takes place. This occupation can be analysed under three occupational forms: work, play and daily living tasks [28;29]. The MOHO, conceptualizes humans as being made up of three interrelated components: volition, habituation, and performance capability [43].

Neurodevelopment therapy

Neurodevelopment therapy (NDT), developed by Karl and Bertha Bobath, is a therapy model based on neurophysiology. Although NDT initially takes place in a clinical setting, evaluation using the model involves collaborative goal setting with the client and his/her family, in the client's environment [28]. NDT is considered a preparatory treatment model, because it is directed towards establishing the sensorimotor performance components that are prerequisites for occupational performance. Much attention is therefore given to preventing the consequences of abnormal tone, and initial movement training uses occupation as a means, with the model describing occupations as being structured to incorporate specific movement strategies [43]. Assessments are made by using muscle tone measurement techniques involving subjective values; reflexes are measured by presence or absence; postural control is measured by observation and the results of reflexes, reactions, muscle tone and synergies.

Occupational behaviour model

The occupational behaviour model, is meant to assist people of all ages and abilities in preventing and reducing the disruptions and inadequacies in occupational behaviour that result from injury and illness [28;43]. Reilly, who produced the model, believed that occupation could be understood and studied via the behavioural sciences and that it could be defined as anything that engages one's time, energy, and resources. Reilly emphasized that occupational behaviour is developed according to a development continuum and includes the person's need to explore, achieve and attain competency. Competency is defined as behaviour which is sufficient or adequate to meet the demands of the situation. Achievement is a specified level of success, attainment or proficiency. Reilly did not identify specific assessment tests in her model, but Cole and Tufano refer to other OT tests that might be relevant choices for the evaluation process when this model is put into practice [42;43].

Person-environment-occupation

The person-environment-occupation (PEO) model, developed by Law and colleagues in 1996, is a conceptual model which aims at describing the interactions between a person, an occupation and an environment, as well as the contribution to occupational performance throughout the person's life [28;42;43]. Five concepts are defined to explain the dynamic model: person, environment, occupation, occupational performance and person-environment-occupation fit. This "fit" is the unique feature of the PEO-model and is illustrated by using Venn-diagrams. Maximizing the "fit" is central to the role of the occupational therapist's intervention. Congruence is also assumed to vary throughout life as on-going development occurs [28]. Intervention can target the person, the environment and the occupation as a three-part focus or any two of these, depending on the needs and demands of the client and with the objective of better occupational performance. The model does not provide specific assessment tests but

the authors suggest the use of the COPM and the Safety Assessment of Function and Environment for Rehabilitation (SAFER).

Person-environment-Occupation-Performance model

The Person-environment-Occupation-Performance model (PEOP), developed in 1985 by Christiansen and Baum and updated in 1997, aims at understanding/explaining human occupational performance and the dynamics/processes that occur when people are actually "doing" things [43]. The model identifies four major components (person, environment, occupations, and performance) and makes the assumption that occupational performance is the outcome of a transaction between people, occupations and their environments. PEOP highlights the complexity of person-environment-occupation relationships defining occupational performance as the outcome of this three-tier transaction in a top-down structure [43]. It studies the health conditions that support or hinder performance, environments that allow and/or restrict performance and the individual person's profile (including needs, preferences and goals). The authors refer to a list of assessments such as the COPM, Occupational self-assessment, and other instruments to be used in OT practice [43].

4.2 What model(s) can be used?

Of the nine identified OT models, only three –Model of Human Occupation (MOHO), Canadian Model of Occupational Performance (CMOP) and Person-Environment-Occupation-Performance model (PEOP) - scored at least one "+" for the criteria used for content analysis.

Table 4 presents the results of the content analysis of those models that scored at least one "+", hereby indicating that MOHO had the highest compliance rate with the analysis criteria.

Table 4 : content analysis of the three selected models

	MOHO	CMOP	PEOP
focus on participation	+	+/-	+/-
focus on work/productivity	+	-	+
ICF- referred	+	+	-
scientifically approved validity	+	+	+
assessment instruments included	+	+/-	+/-

*: - criterion is not presented in the model; +/- criterion is mentioned in the model but not elaborated; + criterion is explicitly elaborated in the model

All three of the analysed models are conceptual OT models, aimed at restoring the functioning of patients using a holistic and multi-disciplinary frame of reference involving the ICF. The MOHO focuses explicitly on labour participation, with clear referral to the ICF as a frame of reference. Although all three models are commonly used in adult rehabilitation, a search of the literature clearly indicates that the MOHO is the best model for use in adult OT interventions due to its scientifically proven validity. Of all the selected models, only the MOHO provides tools and instruments that are clearly focussed on RTW with explicit emphasis on the importance for the occupational therapist to concentrate not only on the patient as an individual, but to include other relevant individuals.

4.3 What adaptation(s) is/are necessary to match the OT model(s) to the BC patient's needs?

From the results of this paper, the MOHO appears to be the most relevant OT model (see Table 4) but adaptations are necessary to enhance the usability of this model for RTW in BC patients. Proposed adaptions were determined starting from the "-" scores for the selected model.

Based on the procedure and literature used to determine the criteria no OT model could be found which was specifically aimed at facilitating RTW for BC patients. General models that focus on RTW for BC patients can be useful to adapt existing OT models [50;51]. Based on the findings in this paper and the literature on RTW in BC [2;3;11;14;52-58] , the following adaptations could improve the MOHO and reinforce the foundations of an OT intervention to be used in supporting RTW for BC patients are:

- Greater emphasis on the goal-setting (e.g. COPM) that needs to be done by patient and therapist (including secondary stakeholders). Following research on RTW in BC survivors, attention should be given to the process of regaining capabilities (which is patient-specific) and to the changes in values and interests that the patient encounters following a life-threatening diagnosis [2;9;50;51;59;60]. This will enable everyone involved in the therapeutic process to understand exactly who should take part in the process and what goals should be attained.
- It is important that indications appropriate to the longitudinal process of the patient's progress be very clear [43;61-66]. Cancer survival can have long-term effects on employment and the ability to work. Employment outcomes can be improved with innovations in treatment and with the introduction of clinical and supportive services aimed at improving the management of symptoms, rehabilitation and the accommodation of disabilities in the workplace [67]. When using a tool for process-indication (such as OPPM and the DM road map) in addition to the model, the implementation of the methods indicated in the model Verbeek and Spelten model [33] (improving treatment, adapting the environment using ergonomics, influencing personal factors) can give a more precise indication of what elements in the recovery and rehabilitation process should be highlighted for this population.

- The MOHO does not indicate when the RTW process can (best) be started, while literature on the needs of BC patients stresses an early start in the treatment and rehabilitation program [11;53;59;60;68-70]. According to Feuerstein and Verbeek and Spelten [50;51] an indication of the appropriate time to start OT in BC can be ascertained when RTW is assumed to be the final aim of the OT intervention. By combining information concerning the occupational capabilities and knowledge of the BC patient and the workplace, the team can indicate the best moment for each individual BC patient. Possible barriers that might affect these individuals' achievement of optimal work outcomes are indicated by Feuerstein (e.g.; patient characteristics, work demands) [50]. Healthcare providers (including occupational therapists) could use this to identify problem areas which could enable them to give more tailored work-related guidance to patients, taking into account the individual's circumstances [10].
- The MOHO used in other patient populations is useful in OT intended to restore these patients' activities and participation, including RTW [71;72]. Adapting the MOHO by the specific addition of work-outcomes as in the "work and cancer model" (return to work, work performance, and work sustainability), will help occupational therapists to focus on elements that are relevant for all stakeholders but are not commonly central to rehabilitation programs.
- By using the OPPM and DM road book as additional tools to the MOHO, not only can the clients' perspective be taken into account, but also that of the secondary stakeholders (e.g. employer, co-workers); the stepwise RTW process can then take place at an appropriate time and when specifically required.

5 DISCUSSION

Patients suffering from BC manifest a great need for support in RTW and this need is not sufficiently answered by current healthcare and rehabilitation services [9]. Successful RTW will most likely be achieved when intervention efforts target the risk factors that exist within the individual, as well those that exist within the work environment [73]. When searching for a OT model that could support an OT intervention aiming on RTW for BCpatients, nine models were selected. After content analysis three models were withheld but not one OT model was found that fitted all of the criteria of the content analysis.

Among the wide variety of OT models of different types, conceptual-practice models that can explain occupational performance have become a major interest in occupational therapy in the last two decades [74]. Stamm *et al*. refer to Reed & Sanderson, stating that for OT's no completely ideal model for health, functioning and disability exists[74], suggesting that OT's should select the aspects of these health models that most closely fit the beliefs and values of OT.

Based on these findings, it is remarkable that in OT interventions, RTW is very rarely (except for the MOHO) mentioned in an explicit way. This is why the MOHO can be used in various populations as it indicates the functional elements in human occupation (mind-brain-body performance subsystem) and relates them to habits and values that guide human activities and participation. A diagnosis of cancer can affect any or all of the subsystems (volition, habituation and mind-body performance) and cause the balance of the benign cycle to be disrupted. When treatment and rehabilitation focus not only on restoring functions but make the final goal the regaining of participation, RTW and the meaning this has for the patient will correspond more closely to the needs of BC patients. It will enable them to rebuild social contacts with co-workers and supervisors, to gain an income and rebuild their careers as part of returning to a normal life. In this way the needs of society will also be answered by decreasing the costs for healthcare and enabling a latent work force. There will no longer be a need for a social allowance to replace the loss of income, and the tax contributions and renewed availability of this workforce will be beneficial [5].

The specific assessment instruments targeting RTW, which are developed within the MOHO, provide tools that help the occupational therapist and the patient to define goals regarding all areas of life. The OPPM indicates the procedure that the patient and the occupational therapist should follow when progress is necessary with respect of the choices that patients need to make during their recovery and rehabilitation period. Combining the approach proposed in the OPPM with the MOHO might provide a good basis for the conceptual-practice model, in order to construct an evidence-based arrangement for research in BC patients [30].

The wide variety in OT models, from theoretically-based models to practical models, from conceptual models to conceptual-practice models [28;29;43] did not facilitate the making of a choice. Moreover, OT theoretical concepts combine models and frames of reference, and the literature is far from unambiguous regarding the exact content of those concepts. Greater consensus is to be found regarding the content of the "conceptual-practice model" [50;51]. No theoretical OT model facilitating RTW in BC patients could be identified (see Table 3).

Exploring the search results (table 2) for the studies on RTW, conceptual models and BC, two models were found that do not specify the professional discipline of the caregivers involved but focus directly on RTW.

The "*Model of the impact of Cancer related symptoms on the return to work of cancer patients, controlling for clinical factors, person-related factors and work-related factors*", is presented by Verbeek and Spelten [51]. It is designed to support participants in RTW for cancer patients (e.g. care givers, cancer patients, employers). Its purpose is to assist these participants in discussing steps that need to be taken to enable work resumption, dealing with problems that are already dealt with in care-situations (hospital, rehabilitation). In this model, RTW is explicitly mentioned in terms of the ICF with

the indication that working is one of the ways in which one can participate in society. Participation is strongly related to the ability to perform activities, which in turn is determined by the proper functioning of the body [51]. According to Verbeek and Spelten, the ICF model offers three methods of intervention: improving treatment, adapting the environment using ergonomics and influencing personal factors, such as attitudes and opinions, as these form a natural target for intervention. OT interventions aimed at facilitating RTW can make good use of this information, since the three methods mentioned by Verbeek and Spelten are central to the professional competencies of OT [75].

Feuerstein *et al*. developed *"Work in cancer patients: a model for practice and research"* (also called the Work-in-Cancer Model), based on a systematic search of the literature on work and cancer [50]. In this model Feuerstein *et al.* take the work of the World Health Organization (WHO) into account, adding specific issues regarding the particular situation of people surviving cancer. The model looks at health and functional status in relation to demands, work environment and policy procedures and financial factors. It makes it possible for clinicians and patients to consider the factors that can be variously addressed by the health-care provider, the patient and the workplace [50].

Feuerstein et al. recommend that clinicians consider how these factors can influence workplace expectations, the structure of the workplace, demands on the worker, resources provided to the worker so that he/she can remain at work, and benefits that are available for work disability.

There should also be consideration of cancer patients who have returned to or remained at work and who experience workplace problems, such as cancer-related discrimination. After the diagnosis and treatment for cancer, an individual may experience a number of adverse work outcomes.

Different aspects of work are considered in the model, including RTW (i.e. when a person returns to full-time work following diagnosis or treatment), ability to work (i.e. an individual's psychological, physical, and social ability to perform work), work performance (i.e. absenteeism, perceived impairment while at work, level of productivity, efficiency, estimation of unproductive time at work) and work sustainability (i.e. remaining employed for a period of time) [50].

Feuerstein *et al.* [50] conclude that there is a need to develop effective and efficient cancer-specific approaches that identify and target the areas related to the many dimensions of work disability in cancer patients over the course of the illness.

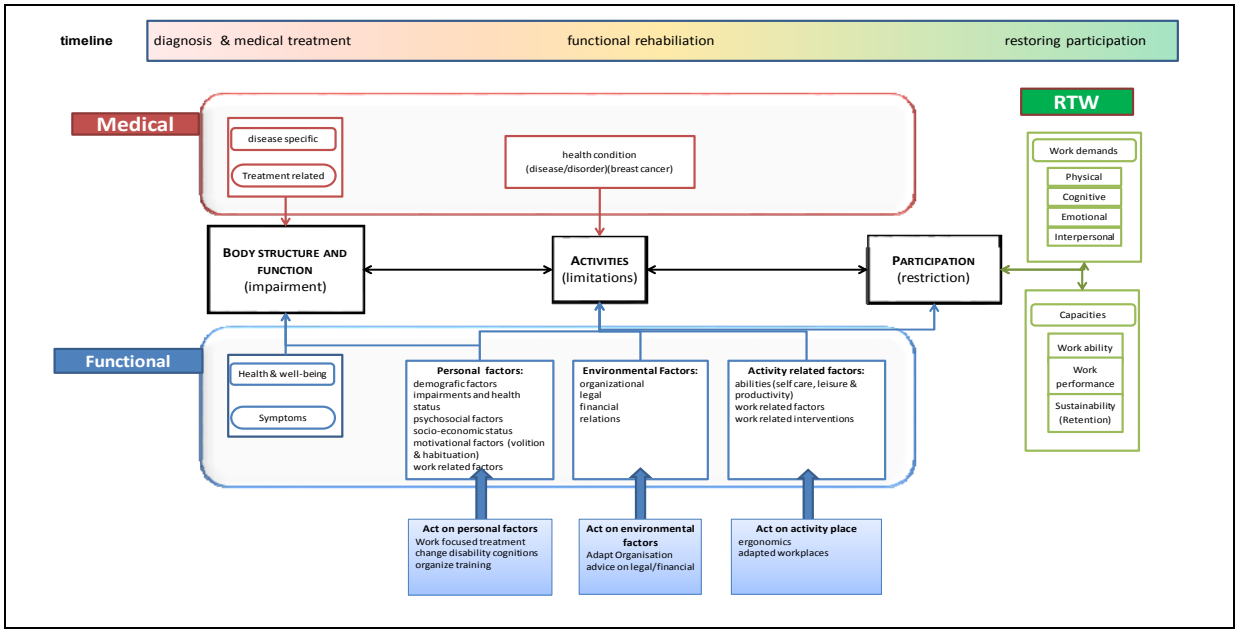
The longitudinal trajectory of the illness with the progressive regaining of capabilities by BC patients, should be included as an operational aspect of an OT model aimed at facilitating RTW, so that the capabilities of the patient can be matched to the demands of the patient's employment. A stepwise approach to the monitoring of the BC patient's progress is therefore necessary, with the efforts that are required at the workplace being taken into account.

Examining the needs of BC patients regarding RTW, this paper has identified a lack of any systematic approach which might attain this goal and which would provide a response to both individual and societal needs. A specific model for RTW in BC that might be used to guide an OT intervention could not be found, even though the MOHO appeared to be a model that offered a possible evidence-based framework. Taking the ICF as a theoretical foundation, the MOHO and Verbeek and Spelten models [51] could be combined, so providing more specific indications of how to improve treatment through OT for BC patients. Used as a guide the "cancer and work model" of Feuerstein et al.[50] can help all those concerned in the RTW process.

As a method, designed to facilitate the employment of persons with disabilities through a coordinated effort, Disability Management (DM) has been developed to include all parties involved, in stepwise support of RTW with a consequent reduction in sick-leave. A DM program is designed to be set up in the workplace and to facilitate the (re)integration of people with disabilities, through a coordinated effort to address individual needs, workplace conditions and legal responsibilities [15;76]. DM includes the use of a road map, indicating the steps to be followed in the process of maintaining or regaining work, and has been introduced in RTW research for different populations [77;78].

When combining MOHO with additional information on models that are not OT specific but do have a strong focus on RTW in BC, the following scheme can be presented:

Figure 1: Organisation model for OT guided RTW intervention for BC patients



Further research will need to focus on the efficacy (rate of success when furnishing the effort) of OT interventions aimed at facilitating RTW for BC patients. Cancer survivors may benefit from coordinated transition planning that includes a multidisciplinary and systematic approach as part of standard care [79].

6 REFERENCE LIST

(1) Hewitt M, Greenfield S, Stovall E. From Cancer Patient to Cancer Survivor: Lost in Transition. http://www nap edu/catalog php?record_id=11468 2005 [cited 2014 Feb 2];Available from: URL: http://www.nap.edu/openbook.php?record_id=11468

(2) Roelen CAM, Koopmans PC, van Rhenen W, Groothoff JW, van der Klink JJL, Bültmann U. Trends in return to work of breast cancer survivors. Breast Cancer Res Treat 2011;(128):237-42.

(3) de Boer AGEM. Work ability and return-to-work in cancer patients. British Journal of Cancer 2008;98(8):1342-7.

(4) Mehnert A. Employment and work related issues in cancer survivors. critical reviews in oncology/hematology 2011;2011(77):109-30.

(5) Belgian Cancer Registry. Cancer Incidence in Belgium 2004 - 2005. Brussels; 2008. Report No.: D/2008/11.846/1.

(6) Charlier C, Van Hoof E, Pauwels E, Lechner L, Spittaels H, De Bourdeaudhuij I. The contribution of general and cancer-related variables in explaining physical activity in a breast cancer population 3 weeks to 6 months post-treatment. psycho-oncology 2013;22(1):203-11.

(7) Tiedtke C, Knops L, Désiron H, Dierckx de Casterlé B, Donceel P, de Rijk A. Supporting Return-to-work in the face of legislation: Stakeholders' Experiences with Return-to-Work after Breast Cancer in Belgium. Journal of Occupational Rehabilitation 2011;22(2):241-51.

(8) Pauwels E, Van Hoof E, Charlier C, Lechner L, Bourdeaudhuij I. Transition into survivorship. A qualitative study of breast cancer survivors' and intimate partners' experiences of the post-treatment phase and preferences regarding on-line support. Ghent: Social Health Sciences, Ghent University & Psychological Sciences, Free University of Brussels; 2012.

(9) Pauwels EEJ, Charlier C, De Bourdeauhuij I, Lechner L, Van Hoof E. Care needs after primary breast cancer treatment. Survivors' associated sociodemographic and medical characteristics. psycho-oncology 2011 Aug 17;22(1):125-32.

(10) Bains M, Yarker J, Amir Z, Wynn P, Munir F. Helping cancer survivors return to work: what providers tell us about the challenges in assisting cancer patients with work questions. Journal of Occupational Rehabilitation 2011;22(1):71-7.

(11) Balak F. Return to work after early-stage breast cancer: a cohort study into the effects of treatment and cancer-related symptoms. Journal of Occupational Rehabilitation 2008;18(3):267-72.

(12) Pryce J. Cancer survivorship and work: symptoms, supervisor response, co-worker disclosure and work adjustment. Journal of Occupational Rehabilitation 2007 Mar 17;17(1):83-92.

(13) Spelten E, Verbeek J, Uitterhoeve AL, Ansink AC, van der Lelie J, de Reijke TM, et al. Cancer, fatigue and the return of patients to work - a prospective cohort study. European journal of cancer 2003 Apr 14;2003(39):1562-7.

(14) Johnsson A, Fornander T, Rutoqvist LE, Olsson M. Factors influencing return to work: a narrative study of women treated for breast cancer. Eur J Cancer Care (Engl) 2010;19(3):317-23.

(15) Goldner E. Disability management, return to work and treatment. Healthcare Papers 2004;5(2):76-90.

(16) Kalina CM. Strategies in disability management. Corporate disability management programs implemented at the work site. Ann N Y Acad Sci 1999;888:343-55.

(17) Prevent. Disability Management. http://www.disability-management.be/intro_dm/ . 2011. Ref Type: Online Source

(18) Désiron HAM, de Rijk A, Van Hoof E, Donceel P. Occupational therapy and return to work: a systematic literature review. BMC Public Health 2011;2011(11):615.

(19) Schene AH, Koeter MWJ, Kikkert MJ, Swinkels JA, McCorne P. Adjuvant occupational therapy for work-related major depression works: randomized trial including economic evaluation. Psychol Med 2006 Nov 20;37:351-62.

(20) Lambeek LC, van Mechelen W, Knol DL, Loisel P, Anema JR. Randomised controlled trial of integrated care to reduce disability from chronic low back pain in working and private life. BMJ 2010;2010(340:c1035).

(21) Chan ML. Description of a return-to-work occupational therapy programme for stroke rehabilitation in Singapore. Occup Ther Int 2008;15(2):87-99.

(22) Hammond A. Rehabilitation in musculoskeletal diseases. Best Pract Res Clin Rheumatol 2008 Jun;22(3):435-49.

(23) Hwang YF, Chen-Sea MJ, Chen CL. Factors related to return to work and job modification after a hand burn. J Burn Care Res 2009 Jul;30(4):661-7.

(24) Paquette S. Return to work with chronic low back pain: using an evidence-based approach along with the occupational therapy framework. Work: A Journal of Prevention, Assessment & Rehabilitation 2008;31(1):63-71.

(25) Haglund L, Henriksson C. Concepts in occupational therapy in relation to the ICF. Occup Ther Int 2003;10(4):253-68.

(26) Leyshon RT, Shaw LE. Using the ICF as a conceptual framework to guide ergonomic intervention in occupational rehabilitation... International Classification of Functioning, Disability, and Health. work 2008 Mar 14;31(1):47-61.

(27) Steiner WA, Ryser L, Huber E, Uebelhart DAA, Stucki G. Use of the ICF Model as a clinical problem solving tool in physical therapy and rehabilitation medicine. Physical Therapy 2002 Nov;82(11):1098-107.

(28) Reed KL, Sanderson SN. Concepts of occupational therapy. fourth edition ed. Lippincott Williams & Wilkins; 1999.

(29) Kielhofner G. Conceptual foundations of occupational therapy practice. 4 ed. Philpadelphia: F.A. Davis Company; 2009.

(30) Ikiugu MN, Smallfield S, Condit C. A framework for combining theoretical conceptual practice models in occupational therapy practice. Canadian Journal of Occupational Therapy 2009;76(3):162-70.

(31) Ikiugu MN. Ikiugu's eclectic method of combining theoretical conceptual practice models in occupational therapy. Australian Occupational Therapy Journal 2011;58(6):437-46.

(32) Désiron H. Occupational therapy and return to work for breast cancer survivors. WFOT Bulletin 2010;61:45-51.

(33) Désiron HAM, Knippenberg E, Willems B, Neerinckx E. Occupational therapy for breast cancer survivors: improving quality of life by return-to-work assistance. Journal of Rehabilitation Medicine 2008 Jun;135-6.

(34) Ikiugu MN, Ciaravino EA. Psychosocial conceptual practice models in Occupational Therapy. 1 ed. St Louis Missouri: Mosby Elsevier; 2007.

(35) Neyt M, Albrecht JA. The long-term evolution of QoL for disease-free breast cancer survivors : A comparative study in Belgium. Journal of psychosocial oncology 2006;24(3):89-123.

(36) Renard F, Van Eycken L, Arbyn M. High burden of breast cancer in Belgium: recent trends in incidence (1999-2006) and historical trends in mortality (1954-2006). 2011. Report No.: 69.

(37) Rommel W, Anciaux V, Leys L, Verhaegen H, De Meyer L, Van Horenbeek D. Een kritische kijk op het kankerbeleid : jaaroverzicht 2004. Brussels: VLK; 2004 Dec.

(38) Tiedtke C, de Rijk A, Dierckx, de Casterlé B, Christiaens MR, Donceel P. Experiences and concerns about 'returning to work' for women breast cancer survivors: a literature review. psycho-oncology 2009 Oct 12;2010(19):677-83.

(39) Tiedtke C, Dierckx de Casterlé B, de Rijk A, Christiaens MR, Donceel P. Breast cancer treatment and work disability: patient perspectives. Breast 2011;20(6):534-8.

(40) Tiedtke C, de Rijk A, Donceel P, Christiaens MR, Dierckx de Casterlé B. Survived but feeling vulnerable and insecure: a qualitative study of the mental preparation for RTW after breast cancer treatment. BMC Public Health 2012 Jul 23;2012(12):538.

(41) Blesedell Crepeau E, Cole JD, Boyt Schell B.A. Willard and Spacksman's Occupational therapy. Philadelphia: Lippincott Williams & Wilkins; 2003.

(42) McColl MA, Law M, Stewart D, Boubt L, Ploock N, Krupa T. Theoretical basis of occupational therapy. second edition ed. Thorofare: Slack Incorporated; 2003.

(43) Cole MB, Tufano R. Applied theories in occupational Therapy. A practical approach. Tjorofare: Slack Incorporated; 2008.

(44) Addy L. Occupational therapy evidence in practice for physical rehabilitation. Oxford: Blackwell Publishing Ltd; 2006.

(45) Kielhofner G. Research in Occupational Therapy: Methods of Inquiry for Enhancing Practice. Chicago: F.A.Davis Company; 2006.

(46) Kinébanian A, Le Granze M. Grondslagen van de ergotherapie. Elsevier; 2006.

(47) Ekbladh E, Thorell L, Haglund L. Return to work: the predictive value of the Worker Role Interview (WRI) over two years. work 2010;35(2):163-72.

(48) Hough PA, Van Rooyen FC, Bredenkamp E, Brough K, Ferreira M, Myburgh H, et al. Guidelines prescribed by general practitioners to patients with acute low back pain regarding 'return to work'. South African Family Practice 2006;48(10):15a-d.

(49) Cole MB, Tufano R. Applied theories in Occupational Therapy. A practical approach. Tjorofare: Slack Incorporated; 2008.

(50) Feuerstein M, Todd BL, Moskowitz MC, Bruns GL, Stoler MR, Nassif T, et al. Work in cancer survivors: a model for practice and research. J Cancer Survivor 2010;(4):415-37.

(51) Verbeek J, Spelten E. Work. In: Feuerstein M, editor. Handbook of Cancer Survivorship.Bethesda USA: Springer; 2007. p. 381-96.

(52) de Boer AGM, Taskila T, Tamminga S, Frings-Dresen M, Feuerstein M, Verbeek J. Interventions to enhance return-to-work for cancer patients. [The Cochrane Library]. 2009. The Cochrane, Library 2009, Issue 1, The Cochrane Collaboration. Published by JohnWiley & Sons, Ltd. 4-2-2011. Ref Type: Online Source

(53) Bouknight RR, Bradley CJ, Luo Z. Correlates of return to work for breast cancer survivors. journal of clinical oncology 2006;24(3):345-53.

(54) Capodaglio P. Work capacity of the upper limbs after mastectomy. G Ital Med Lav Ergon 2000;19(4):172-6.

(55) Carter BJ. Surviving breast cancer: a problematic work re-entry. Cancer Pract 1994 Mar;2(2):135-40.

(56) Clark JC, Landis LL. Reintegration and maintenance of employees with breast cancer in the workplace. AAOHN J 1989 May;37(5):186-93.

(57) Hoving JL, Broekhuizen MLA, Frings-Dresen MHW. Return to work of breast cancer survivors: a systematic review of intervention studies. BMC Cancer 2009 Sep 21;9(117).

(58) Mock V. Breast cancer and fatigue: issues for the workplace. AAOHN J 1998;46(9):425-3.

(59) Feuerstein M. Cancer survivorship and work. Journal of Occupational Rehabilitation 2005 Mar;15(1):1-2.

(60) Spelten ER, Sprangers MA, Verbeek JH. Factors reported to influence the return to work of cancer survivors: a literature review. psycho-oncology 2002 Mar;11(2):124-31.

(61) Boyt Schell B.A., Blesedell Crepeau E, Cohn ES. Overview of intervention : section 1 : Occupational Therapy intervention. In: Schell BAl, Blesedell Crepeau E, Boyt Schell B.A., editors. Willard & Spackman's Occupational Therapy. 10 ed. Lippincott Williams & Wilkins; 2003.

(62) Corr S. Returning to work after a stroke: an important but neglected area. British Journal of Occupational Therapy 2003 May;66(5):186-92.

(63) Faber E. Treatment of impingement syndrome: a systematic review of the effects on functional limitations and return to work. Journal of Occupational Rehabilitation 2006 Mar 16;16(1):6-25.

(64) Franche R. Workplace-based return-to-work interventions: optimizing the role of stakeholders in implementation and research. Journal of Occupational Rehabilitation 2005 Dec 15;15(4):525-42.

(65) Gatchel RJ. Treatment- and cost-effectiveness of early intervention for acute low-back pain patients: a one-year prospective study. Journal of Occupational Rehabilitation 2003 Mar 13;13(1):1-9.

(66) Jang Y. A Work-Oriented Occupational Therapy Programme for individuals with physical disabilities. Occupational Therapy International 1997;Electronic(4):304-16.

(67) Short PF, Vasey JJ, Tunceli K. Employment pathways in a large cohort of adult cancer survivors. Cancer 2005 Mar 15;103(6):1292-301.

(68) Amir Z, Moran T, Walsh L, Iddenden R, Luker K. Return to paid work after cancer : a British experience. J Cancer Surviv 2007;1:129-36.

(69) Kennedy F, Haslam C, Munir F, Pryce J. Returning to work following cancer: a qualitative exploratory study into the experience of returning to work following cancer. Eur J Cancer Care (Engl) 2007;16:17-25.

(70) Main DS, Nowels CT, Cavender TA, Etschmaier M, Steiner JF. A qualitative study of work and work return in cancer survivors. psycho-oncology 2006;2005(14):992-1004.

(71) Braveman BH. Development of a community-based return to work program for people with AIDS. Occupational Therapy in Health Care 2001 Apr 13;13(3/4):113-31.

(72) Lee J., Kielhofner G. Vocational intervention based on the Model of Human Occupation: a review of evidence. Scand J Occup Ther 2009;2010:1-14.

(73) Sullivan MJL, Simmonds M, Butler D, Shalliwani S, Hamidzadeh M. Rehabilitation. In: Feuerstein M, editor. Work and Cancer Survivors.Bethesda: Springer; 2009. p. 211-32.

(74) Stamm TA, Cieza A, Machold K, Smolen JS, Stucki G. Exploration of the link between conceptual occupational therapy models and the International Classification of Functioning, Disability and Health. Australian Occupational Therapy Journal 2005 Jun 16;2006(53):9-17.

(75) World Federation of Occupational Therapists. Aims of Occupational Therapy. http://www wfot org 2009(World Federation of Occupational Therapists)

(76) Rieth L. Integrated disability management: taking a coordinated approach to managing employee disabilities. AAOHN J 1995;43(5):270-5.

(77) Loisel P. From evidence to community practice in work rehabilitation: the Quebec experience. Clin J Pain 2002;19(2):105-13.

(78) Williams RM. Perspectives on workplace disability management: a review of the literature. work 2002 Jan 19;19(1):87-93.

(79) Howell D, Hack TF, Oliver TK, Chulak T, Mayo S. Models of care for post-treatment follow-up of adult cancer survivors: a systematic review and quality appraisal of the evidence. Journal of Cancer Survivorship 2012 Jul 9;6(4):359-71.

CHAPTER 5 : BRIDGING HEALTH CARE AND THE WORKPLACE: FORMULATION OF A RETURN-TO-WORK INTERVENTION FOR BREAST CANCER PATIENTS USING AN INTERVENTION MAPPING APPROACH

Huguette A.M. Désiron, Rik Crutzen, Lode Godderis, Elke Van Hoof, Angelique de Rijk

Journal of Occupational Rehabilitation 2016 Jan 4. [Epub ahead of print]

1 ABSTRACT

Purpose:

An increasing number of breast cancer (BC) survivors of working age require return to work (RTW) support. Objective of this paper is to describe the development of a RTW intervention to be embedded in the care process bridging the gap between hospital and workplace

Method:

The Intervention Mapping (IM) approach was used and combined formative research results regarding RTW in BC patients with published insights on occupational therapy (OT) and RTW. Four development steps were taken, starting from needs assessment to the development of intervention components and materials.

Results:

A five-phased RTW intervention guided by a hospital-based occupational therapist is proposed: 1) Assessing the worker, the usual work and contextual factors which impacts on (re-)employment; 2) exploration of match / differences between the worker and the usual work; 3) Establishing long term goals, broken down into short term goals; 4) setting up tailored actions by carefully implementing results of preceding phases.; 5) Step by step, the program as described in phase 4 will be executed. The occupational therapist monitors, measures and reviews goals and program-steps in the intervention to secure the tailor-made approach of each program-step of the intervention.

Conclusion:

The use of IM resulted in a RTW oriented OT intervention. This unique intervention succeeds in matching individual BC patient needs, the input of stakeholders at the hospital and the workplace.

Keywords:

Breast cancer; Occupational therapy; Return to work; Intervention Mapping; Vocational rehabilitation

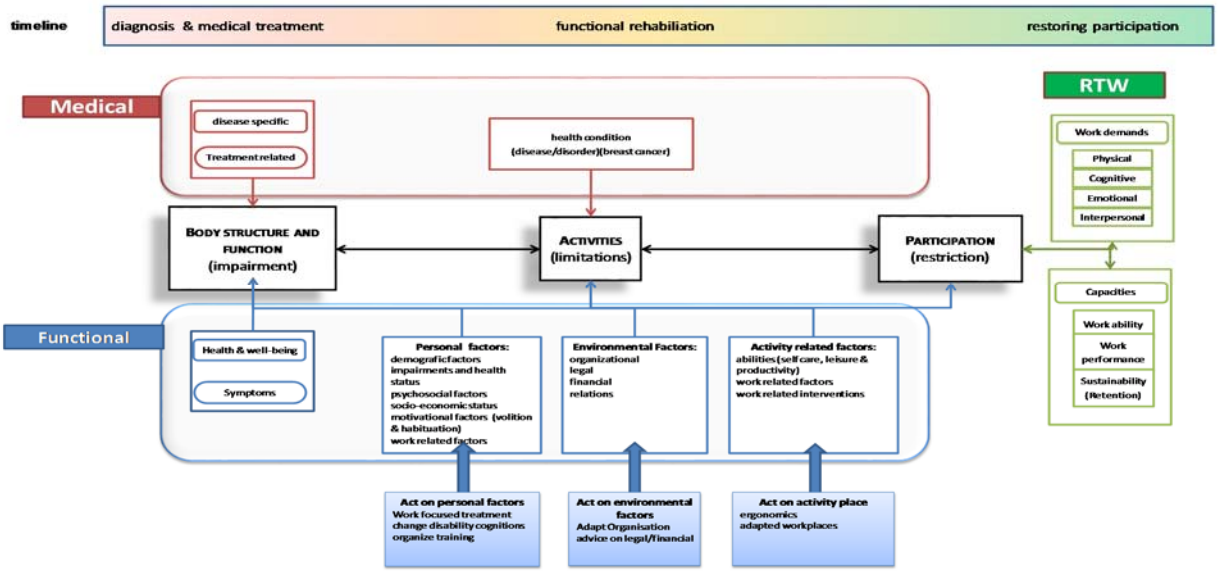
2 INTRODUCTION

An increasing number of breast cancer (BC) patients younger than 60 years enter chronic care after surviving BC. They cope with fatigue, anxiety, loss of social and professional participation, and loss of Quality of life (QoL) [1;2]. BC patients experience specific problems in return to work (RTW), which indicate the need for adequate interventions [1;3;4]. Assisting BC patients in maintaining or regaining their (labour-) participation delivers substantial support for BC patients in regaining their QoL [5-8].

RTW interventions are always imbedded within a specific legal context of the country. In many countries, efforts aiming at RTW are ad hoc and not structurally embedded nor refunded by any governmental structure [2;3;9-11]. With a social insurance system that is oriented on protecting income, RTW is - in Belgium - not well known by BC patients, their employers and health care workers [2;3;12-15]. Although Belgian employers are obliged by law to organize occupational health care for employees, occupational physicians hardly play a role in sickness and disability management [16]. Consequently, at date, guidance and advice on RTW is not an explicit part of daily work of caregivers indicating the cause of the gap between health care and work that is experienced by patients and caregivers and described in international literature. This leads to increasing disappointment, fragmentation of care, disillusions and job-loss (after regaining work) for patients and employers [2;3;12-16].

Referring to the International Classification on Functioning, disability and health (ICF), we described a specific OT model for RTW in BC (see figure 1: Organizing Model of practice for RTW in BC (OM) [4]. This model is based on the Model of Human Occupation (MOHO) but adaptations were proposed to create a better fit with the specific psychosocial needs throughout the patient trajectory [3].

Figure 1: Organizing model of practice for RTW in BC (OM) [4]



Preparative work for this research indicates that the active participation of combined efforts of all stakeholders (including the patient) demands an interdisciplinary approach, the use of shared decision-making and an early start of a narrow-tailored support from diagnoses on [10;14;17-23]. These functional requirements must be well recognizable in the RTW intervention this paper aims to develop. International literature on RTW-interventions made clear that Intervention Mapping (IM) is an effective method to develop the RTW-intervention this paper aims at [24-31]. The IM approach presents a logical, methodical, step-by-step procedure that helps researchers to organize their thinking as they move on from theory and evidence to practice while advocating a systematic use of the literature. The iterative process that IM proposes, forces the researcher to move back and forth between the steps and by doing so thoroughly connect theory and research findings to practice as it will be implementable in patients' reality [26;27].

The ultimate goal of RTW interventions, is to provide adequate care that empowers BC patients to maintain or regain (labour-)participation and – thereby – enhance their quality of life. In this paper we use the term "(labour-)participation" to indicate that the content not only relates to employed BC patients who are on sick leave (needing to regain employment). We also include BC patients that combine work and treatment (needing maintaining work). We assumed an OT intervention to be the necessary link between health care and workplace [32]. The objective of this paper is to describe the systematic development of a RTW-intervention using the Intervention Mapping approach.

3 METHOD

The protocol provided by IM describes 6 steps of which we followed the first 4 steps, as described below [33-35].As this paper focuses on the development of the intervention, step 5 (planning for program adaptation, implementation, and sustainability) and step 6 (planning for evaluation) will be part of further research and therefore not included here.

(1) Needs assessment:

In order to detect the needs of the two key stakeholders (BC patients and occupational therapists), a literature search was carried out in electronic databases: Pubmed, Cinahl, OTseeker, Ebsco with the following key-words: "patient needs"; "breast cancer"; "return to work"; "occupational therapy", and "vocational rehabilitation". By combining the results of this search [1-4;8;10;11;13;14;18;36] with the results of formative research [37-40] during 2 discussion sections by the authors, the psychosocial needs of BC patients regarding RTW were listed up.

(2) Identification of outcomes, performance objectives and change objectives:

This step aims to define what should change in the behaviour of the target group and/or the environment in order to answer the needs regarding RTW. The authors used 2 group discussions to discuss results of a literature search using IM guidelines Therefore, the IM guidelines were supplemented with literature on the use of IM in other target-groups and/or problem settings [24-28;31;41].

(3) Selecting theory and evidence based methods and practical applications:

Following the IM protocol, we identified theoretical methods that can influence change in determinants. These methods were linked to the change objectives [42-50]. After the discussion on the theoretical methods, the authors translated them into practical applications, using the same sources as mentioned above. Practical applications have been defined as specific techniques for practical use of theoretical methods in ways that fit 1) the intervention group and 2) the context in which the intervention will be conducted.

(4) Developing intervention components and materials:

Result of this step are creative program components and materials in support of the goals of the intervention ensuring that the final intervention fits both the target population and the contexts in which it will be delivered. The rigorous, stepwise IM approach was used to ensure the RTW intervention met the change objectives and to make the practical applications usable in OT practice regarding RTW in BC patients. During 2 discussions sessions, we used the scientific material mentioned earlier to discuss on interventions regarding each determinant and change objective. This intensive approach enabled us to define specific components and materials that describes the scope and content of the intervention.

4 RESULTS

Step 1.Psychosocial needs assessment

Without ignoring BC patients' needs on medical issues, this section gives an overview of their needs regarding psycho-social aspects of having to deal with RTW combined with disease and treatment.

- Need of taking RTW into account in care process, from the moment of diagnosis on.

  Being able to get back at work is experienced as beneficial for quality of life in the healing process (e.g. by being supportive to participate in normal life and social activities and assist prevention of financial burden caused by long term sickness absence) [51;52]. After diagnosis, the cure processes mainly focus on the treatment of the disease and management of side-effects.

BC patients express need for additional psychosocial support in RTW, which is not addressed in a sufficient way [2;11]. During and after treatment, BC patients also need support to regain activity, to cope with the illness and consequences of the treatment, and to resume participation in a sustainable way [53;54]. Sustainable labour participation is defined as having the abilities to maintain working for at least 12 months in a way that the patient can keep up compliance to rules and regulations of the employing organisation on one hand and on social insurance and on health & safety at work on the other hand. Similar to other countries with an income-protection oriented social insurance system, the Belgian system does not stimulate implementation of a work-focused intervention in a systematic, structured way [11;55]. Consequently, BC patients experience the need to get help, from diagnosis on; to prevent loss of job and participation [6;13].

- Need for recurrent information adapted to the specific situations during the patients' trajectory of transition to survivor.

  Certainly in the first 3 to 6 months after diagnosis, patients do not consider themselves able to manage their RTW-process, even if they are very concerned about it [1]. They ask for assistance during contacts with other stakeholders (e.g. employer, social security administrators), and express the need for guidance in their process to regain abilities. This assistance covers several aspects, as indicated in the earlier presented model (figure 1) covering: patient's personal factors (e.g. demographic factors, socio-economic status, impairment and health) their individual roles and habits (habituation), their abilities to function in daily life (mind-brain-body performance) and values and interests (volition). These aspects form the starting point for therapeutic interventions, including patient's individual context and personality.
- Need to facilitate informed decisions on how to go on with their lives during and after treatment. The process of transition from patient to survivor differs between and within individuals [55;56]. Tiedtke et al not only distinguished different patient perspectives, but they also recognised that patients can shift from one perspective to another as life goes on [2;15;57]. Hence, patients need to be supported in (re-)evaluating their situation using designated information on different moments in time during treatment and rehabilitation.
- Need for assistance in taking decisions on actions needed and support in realizing actions that - consequently - are to be taken. The OM provides a framework that enables occupational therapists to address the patients' need for support to resume their daily activities, including work [1;2;52]. BC patients indicate that, apart from hindering their own RTW-process, the lack of information by other stakeholders is a burden for them [3;52;58]. Both scientific research and clinical findings indicate the need for multidisciplinary assistance of BC patients from the moment of diagnosis on [3;10;43;53;59-63]. In order to address BC patients' needs, rehabilitation efforts must be "tailor-made" focussing on the patients' vulnerabilities, individual

job-demands and work-ability [64]. This includes taking RTW-policies of employers into account as well as rules and regulations of other stakeholders (e.g. social insurance provider).

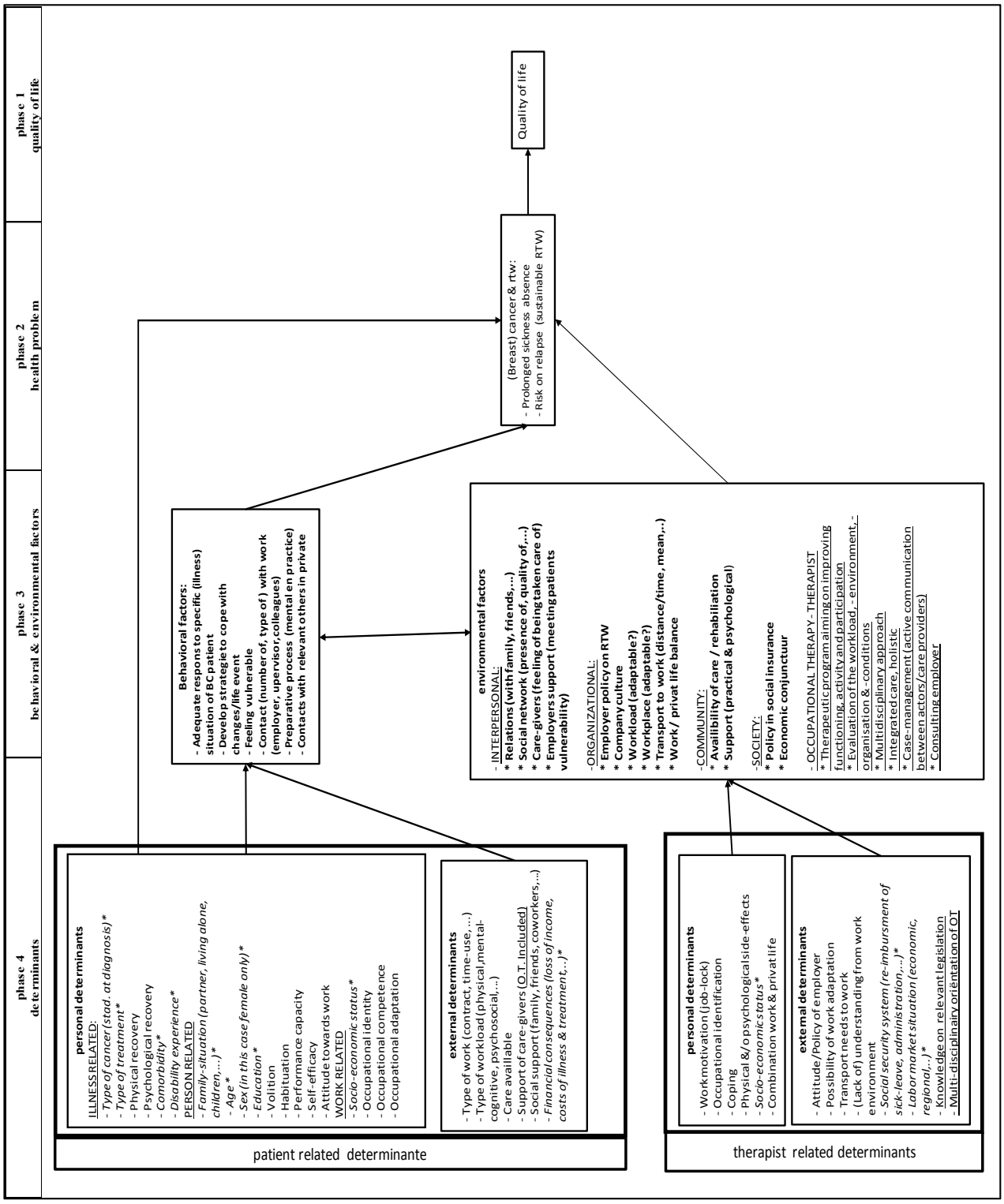
Also occupational therapists have needs to provide "evidence based best practice" when supporting BC patients in (labour-) participation:

- As in RTW-programs for other patient populations, OT needs to make use of a participatory ergonomic approach [65;66]. As our research and international literature indicates, OT assistance must consist of tailor-made support programs, including all stakeholders. In addition, OT should implement case-management and make use of workplace visits and adapted work conditions [10;63;67-69]
- Need for putting more upfront those OT competences that focus on enhancing patients' participation

  Currently, OT for (breast-) cancer patients focuses rather on self-care and palliative goal-setting than on assisting survivors regaining an active role in society [36;45;70]. Especially OT competences that aim at coaching all persons involved in the patients' life (e.g. partner, family, employer, social insurance physician, etc.) are trained during OT education and need to be incorporated in current OT practice [10;32;71-75].
- Need for a framework that conceptually guides RTW support for BC patients. Together with the MOHO, the ICF was used as theoretical framework to develop the OM (see figure 1) to support the multidisciplinary teamwork where OT was embedded [4]. Combining OT reasoning with the timeline of BC care, the OM acknowledges therapists' needs to deliver tailored RTW-service in the different phases of transition from patient to survivor [4].
- Need for integration of OT in oncologic care. The guidelines described by Crompton et al., advocate OT should be included in usual care for BC patients but they also acknowledge the lack of OT in many oncological care centres in UK [45]. The need for OT to be more corroborated when RTW questions are at stake in patients' evolution is recognized in studies both on RTW and on OT in BC [10;49;50;67;76].
- Need to deliver care that addresses the patients' needs more directly. Désiron et al [10] indicated that OT needs to 1) be part of an integrated, holistic and client-centred approach; in a legal and societal environment that supports RTW, 2) be embedded in a multi-disciplinary setting that includes psychosocial care; 3) to be available in the very early stage of the rehabilitation process of the BC patient; 4) to support the goal setting of the RTW process with focus on abilities of the patient and linked to the total QoL of patients; and 5) include workplace visits to observe the patient's situation and have contact with all stakeholders [10;77].

We used the IM protocol (see figure2) to clarify the determinants used to guide the decision process. This resulted in the indication of elements to be taken into account in the RTW intervention in order to respond to the needs mentioned above.

Figure 2: Phases of IM reasoning from QoL to determinants



Legend: *=not influenced by the intervention; **Bold= Patient perspective;** underlined= perspective of Occupational therapist

Step 2. Identification of outcomes, performance objectives and change objectives

As indicated by Bartholomew et al, performance objectives break down the health-promoting behaviour and the desired environmental conditions into clear, concise statements that describe the criteria for achieving the desired change [34;35;78]. When defining performance objectives, the IM protocol prescribes to "flip over" the needs of the targeted population (as detected in step 1) to be able to indicate this desired behaviour and environmental conditions.

The behavioural outcomes (targets of the intervention) were defined as the result of authors' group discussions and were divided in patient-oriented outcomes and OT oriented outcomes, both sharing the RTW interventions' final objective (enhancing QoL). The RTW intervention aims at facilitating (labour)) participation but does not necessarily include the obligation for patients to regain their jobs.

In table 1, determinants are organised as illness related -; personal related-; and work related determinants to structure what BC patients need to do to perform the actions that will enhance (labour) participation (see table 1). These actions are part of the therapeutic collaboration between BC patient and occupational therapist, embedded in the care of the multidisciplinary team (MDT). Using the IM protocol, performance objectives were derived from earlier formative research, combined with international literature and the analysis of the authors' group discussions. Following the IM protocol change objectives with were identified suing the same procedure just described with focus on what people need to learn with regard to determinants related to the performance objective.

The OT oriented outcomes of the RTW intervention should encourage and invigorate the competences of occupational therapists that are (at date) underused, especially those competences related to coaching patients, their relatives and their employers in a change process with RTW as focus and improvement of QoL as final goal. The professional actions of the occupational therapist will be defined by the need to reach the work-related goals, and facilitate the changes required in patients' behaviour and their personal situation /context as presented in table 1. As the patient and the occupational therapist are closely collaborating during the therapeutic process, performance objectives and change objectives are presented together in one table (table 1). Additionally the focus of this part of the RTW-intervention is to initiate actions that are not part of the therapeutic relation as such, but need to be set up together with the other stakeholders involved to ensure a continuum of RTW support (see table 2)

Table 1: Patient oriented performance objectives and change objectives

Breast Cancer Patients' perspective		Change objectives	
Performance objectives	**Determinants**	**Patient behaviour**	**Occupational therapist behaviour in therapeutic relation**
* evaluate current (functional) situation * Define therapeutic goals * Define perception on work-life balance	**Illness related** - physical recovery - psychological recovery - psycho-social recovery **Personal related** - performance capacity (self-efficacy) **Work-related** - occupational identity - occupational competen-ce - occupational adaptation	* Assimilate information from caregivers * Enhance awareness of abilities * Enhance acceptation of disabilities * Change disability cognitions * Collaborate in goal-setting (work-life balance / QoL) * Reflect on job & being at work (patient's perspectives) * Question caregivers on relevant issues * Define roles & habits * Make argumented choices (shared decision making) * Decide on goal setting (work-life balance / Qol) * Evaluate importance of other roles in life (at home…) * Discuss allocation of tasks connected to those roles (who does what, when, how) * Participate in goal-setting (work/life balance & QoL) * Describe and discuss task allocation * Participate in ability assessment * Collaborate in screening dis-abilities * Be an active participant in vocational oriented therapy * Reflect on (temporally) results * Share reflections with multidisciplinary team * Participate consisting in vocational rehabilitation program * Ask for repeated &/o additional information (if necessary)	* Inspect medical record of patient * Determine rehabilitation needs (roles, values, habits,…) * Facilitate tailor made goal-setting (shared decision making) * Provide tailor made information to the patient (including answering questions) * Evaluate effect of patients' 'habits on functional aspects& perceived QoL * Provide support in shared decision making process * Provide documented advice on goal-setting * Report to multidisciplinary team * Determine scope & limitations on functional level (ability assessment) * Provide tailor made rehabilitation program * Participate in multidisciplinary teamwork * Evaluate effect of patients' habits on functional aspects & perceived QoL * Provide support in shared decision making process * Provide documented advice on goal-setting * Report to multidisciplinary team

* Define goalsetting regarding work * Train /enhance abilities regarding work	**Illness related** - recovery (over-all) **Personal related** - performance capacity - attitude towards work **Work- related** - occupational identity - occupational competen-ce	* Enhance awareness of abilities * Create acceptation of functional scope & limitations * Decide on goal-setting (work-life balance / QoL) * Reflect on matching own abilities & requirements of the job * Identify patients' attitude towards "being at work" * Enhance awareness of functional scope & limitations Execute training program (changing methods, using technical aids…) * Train assertivity * Train ability to ask for assistance * Recognize and respect need for rest (recovery) * Train recovery-possibilities * Explore & respect functional limitations * Identify workability * Execute tailor made training program (rehabilitation) * Evaluate training results	* Provide tailor-made information to the patient (including answering questions) * Set up tailor made training to enhance work related abilities * Set up communication with employer & other relevant stakeholders (social security,… * Participate in multidisciplinary team * Inventory patients' habits regarding being at work * Discuss alternatives with the patient * Provide training program * Report to multidisciplinary team * Compare abilities to work-load (work hardening & work conditioning) * Evaluate comparison abilities and requirements of the job * Detect discrepancies * Translate discrepancies into goal-setting for training program * Set -up tailor made training program * Relate goal-setting and program content to treatment/rehabilitation program * Assist patient in setting goals on assertivity, self-efficacy,…. * Provide tailor made training program (cfr multidisciplinary team) * Assist / support patient in consistent use of training results

Table 2: occupational therapist oriented performance objectives and change objectives

Occupational therapists' perspective	Change objectives			
Objectives (behavioural)	**Illness related**	**Personal related**	**Work related**	**Environmental factors**
* Provide early OT program (focus on participation)	* Inspect medical record of patient * Determine scope & limitations / abilities * Determine rehabilitation-needs * Provide tailor-made training program / rehabilitation	* Define patients' needs * Describe pat situation * Describe work-life balance * Detect / co-define goals in personal life of patients	* Detect perceptions regarding ' being at work * Patient and other stakeholders communicate on RTW	* Describe geographic sit regarding transport to work * Inventory opinion of relevant others
* Execute evaluation of workload, - environment, - organisation & - conditions	* Organise and execute job analysis * Estimate workload * Execute analysis of work situation (holistic, incl. additional conditions e g transport,…)	* Detect "weight" of elements in work (stimulating, hindering..) * Define social economic status of job / work (image…)		
* Organise integrated care	* Participate in multi-disciplinary team meetings	* Organise patient-participation in multidisciplinary team meetings		
* Provide holistic goal-setting	* Shared decision making (all stakeholders)	* Support and participate in shared decision making process		
* Participate in a multi-disciplinary approach	* Define disciplines & stakeholders involved	* Communicate to relevant stakeholders * Organize stakeholder meetings &/o communication between stakeholders		
* Implement case-management strategies	* Make stepwise use of case-management method	* Participate actively in case-management * Evaluate results & propose program adaptations if necessary		

Environmental outcomes focus on equilibrium between 1) abilities of the BC patient, her choices in (work) life and 2) the workload / work offer that can be provided by the employer. This includes respecting RTW policy (legal obligations and directions of the employer); evaluating expected work performance (by criteria preliminary agreed upon by the stakeholders); assessing scope, limitations and workload of the job together with occupational hazards that could occur due to patients' functional limitations.

Table 3: Performance objectives and change objectives in environmental factors

Environment		
Performance objectives (environmental)	**Determinants**	**Change objectives**
* Set up inventory of job requirements * Assess work-load / occupational hazards * Define differences between abilities & requirements * Early detection of need in RTW by patient * Collaboration of caregivers and occupational health at workplace * Explore opportunities for fitting requirements to abilities * Setup / enhance RTW system in workplace	**Illness related** - Occupational health risks - Coping - Physical & psychological side-effects **Personal related** - Work motivation - Coping - Occupational identification **Work-related** - Type of work & workload - Support (care givers, social environment, colleagues,...)	* Participate in work place visit * Execute job analysis * Define motivated choices (also if changes are necessary) * Work performance * Advice &/o assistance with adaptations of the job content, work environment &/o -organisation * Scope & limitations of the job (occupational health risks / hazards) * Discuss attitudes towards "being at work" from patient & colleagues * Task allocation (who does what, when, how…) * Work-organisation * Check requirements of duties at home & in social life
* Follow-up when patient is on duty * Decide on regular evaluation (what moments, who involved…) * Organise over-all support (incl. additional external conditions e.g. transport to work, use of equipment…)	**Illness related** - Physical & psychological side-effects - Care available **Personal related** - Work motivation - Occupational identification - Coping **Work-related** - Occupational adaptation possible? - (Lack of) understanding from work-environment	* Information on relevant issues * Build self-understanding / self-esteem * Follow-up (sustainability) * Retention * Sustainable work performance * Overall work load (physical, mental, psycho-social…) * Aligning abilities & requirements * Check feasibility of combining job & other life aspects
* Evaluate additional conditions	**Work-related** - (Lack of) understanding from work environment	* Work organisation * Organisation of other roles in life * Assessing job-evolution / changes * Organise transport to work * Manage fatigue * Train assertivity * Evaluation of occupational physician & prevention consultant * Vocational conditions * Relevant legislation is applicable? * Point of view/ acceptance of patients' situation by relevant others * Transport to work *Check consequences (financial, social insurance…)

Islam et al. stated that minimising the identified barriers (like ethnicity, education, chemotherapy, poor health condition and fatigue, depression and emotional distress) and strengthening the indicated facilitators (such as social, family and employer support, and financial independency) could improve the percentage of RTW among BC survivors [81]. Those elements are taken into account in the change objectives, focussing on changes in behavioural objectives that can be directly influenced by patients participating in an OT program.

Coole et al identified that in people with musculoskeletal disorders necessary communication between occupational therapists and employers is influenced by a number of factors, including those which are outside the therapists' control [44]. In their role as case-managers, occupational therapists should guard all other stakeholders incorporate these factors when supporting RTW. Table 3 presents the results of the group discussions in order to identify the performance objectives and change objectives that are necessary to accomplish the changes in environmental factors.

Step 3.Selection of theory –based methods and practical applications

To guide the work in this step, the Organizing Model of Practice for RTW in BC patients (figure 1) was used when implementing results of formative research and additional international literature search in the group-discussions aiming to perform step 3 of the IM approach [18;37-40;82]. Since the OM not only indicates determinants of change but also provides suggestions regarding on how to achieve change, it was used as starting point for selecting methods. The need to do so is eminent, since OT enabling skills and strategies are complex [83].When planning, implementing and evaluating strategies, occupational therapists have to embrace and engage scientific, ethical and creative thinking to address the occupational goals of the patient [83]. Following Curtin, there is no formula to follow when working with people. Occupational therapists need to be wise practitioners to ensure their role as enablers aiming on ultimately improving occupational performance and engagement of their patients [83].

Theory-based methods

Starting an OT intervention, the occupational therapist uses a theoretical model that resonates most closely with the client's occupational performance issues [47;84;85]. As a result of preparative research, the Model of Human Occupation appeared to be useful for the development of an OT oriented RTW-intervention even though some adaptations were needed (see fig 1). The MOHO evolved to be a leading model in OT that provides validated and reliable different tools. Apart from using specific OT literature, the RTW intervention can include research results on factors that are known to improve workability in BC patients [13;15;81;86].

Strategies and practical applications

An OT intervention can add specific expertise to the current care program, combining medical and technical / ergonomic information, since this is part of the core of OT [32;87;88]. Strategies used by occupational therapists usually are placed in two major categories: top-down and bottom-up [83]. The rationale behind

top-down strategies is that participation can be improved through adapted performance of occupations, even though impairments cannot be completely cured. The rationale behind bottom-up strategies is that body structures and functions support occupational performance and engagement and that by improving the patients' abilities, there will be a corresponding improvement in performance and engagement. If impaired physical, psychological and cognitive skills are remedied or compensated for, then it becomes possible for the patient to re-engage in occupations [83]. Curtin indicates six different strategies that are commonly employed by occupational therapists: remediation, compensation, education, community development, transformation, and redistributive justice [83]. These strategies embrace the traditional focus of OT, in which ten specific enabling skills are put to use: adapt, advocate, coach, collaborate, consult, coordinate, design/build, educate, engage and specialise [83]. In the IM based intervention that this paper presents, those strategies are inclusively part of the OT professionalism and therefore not repeatedly mentioned.

Table 4: Methods & strategies used by patient and occupational therapist to realize changes in volition-subsystem

Volition (personal causation, values, interests)				
Performance objectives (behavioural)	**Patient behaviour (change objective)**	**Methods**	**Occupational therapist behaviour (change objective)**	**Methods**
* Evaluate current (functional) situation * Define therapeutic goals * Define perception on work-life balance	* Assimilate information from caregivers * Enhance awareness of (dis-)abilities * Enhance acceptation of (dis-)abilities * Adapt disability cognitions * Goal-setting (work-life balance / QoL) * Reflect on job (patient's perspectives) * Question caregivers on relevant issues	* Consciousness raising * Framing * Participative problem solving * Goal setting * Shared decision making * Self re-evaluation * Environmental evaluation * Personalizing risk * Scenario based risk * Modelling * Elaboration	* Inspect medical record of patient * Determine rehabilitation needs (roles, values, habits,…) * Tailor made goal-setting (shared decision making) * Provide tailor made information to the patient (including answering questions) * Use OT model to set up comprehensive action plan (focus on restoring participation)	* (Good OT practice) * Elaboration * Framing * Modelling * Shared decision making * Goal setting * Enhancing network linkages * Technical assistance * Participative problem solving
* Define goal-setting regarding work * Train /enhance abilities regarding work	* enhance awareness of abilities * create acceptation of functional scope & limitations * decide on goal-setting (work-life balans / QoL) * reflect on matching own abilities & requirements of the job		* provide tailor-made information to the patient (including answering questions) * set up tailor made train to enhance work related abilities * connect to employer & other relevant stakeholders (soc.sec.,…) * participate in mdteam	

Using the MOHO-subsystems (volition, habituation, mind-brain-body performance and personal & external factors) as framework, table 4 – 7 present specific methods and strategies occupational therapists may add to

their therapeutic skills and strategies, trying to meet behavioural objectives agreed upon in OT sessions. These OT specific professional actions must connect to methods, skills and strategies used by other caregivers of the multidisciplinary team in which OT is embedded.

Table 5: Methods & strategies used by patient and occupational therapist to realize changes in habituation subsystem

Habituation (roles, habits)				
Objectives (behavioural)	**Patient behaviour (change objectives)**	**Methods**	**Occupational therapist behaviour (change objectives)**	**Methods**
* Evaluate current (functional) situation * Define therapeutic goals * Define perception on work-life balance	* Define roles & habits * Make argumented choices (shared decision making) * Decide on goal setting (work-life balance / Qol)	* Elaboration * Tailoring * Individualization * Shared decision making * Goal setting * Participative problem solving * Consciousness raising * Framing * Modelling * Persuasive communication	* Question habits and reasons for their existence in patients behaviour * Assist patient to discover functional alternatives * Provide advice and support for choices on change of habits of patient * Offer program to train alternative methods (e.g energy management;...) * Provide advice on alternatives for material used * Offer program in coping with loss & differences in life, in line with other MDT-professionals * Evaluate effect of patients 'habits on functional aspects& perceived QoL * Provide support in shared decision making process * Provide documented advice on goal-setting * Report to MDT	* Elaboration * Framing * Goal setting * Shared decision making * Enhancing network linkages * Public commitment * Tailoring * Individualization * Counselling
* Define goal-setting regarding work * Train /enhance abilities regarding work	* Patients' attitude towards "being at work" * Vocational rehabilitation * Awareness of functional scope & limitations * Training (changing methods, using technical aids…)		* Discuss with patient on choices regarding work * Offer program to enable patient to train work-related abilities (e.g. assertiveness, energy management,..) * Set up an progressive RTW-procedure * Evaluate progress and barriers in RTW * Provide advice on RTW process continuation * Inventory patients' habits regarding being at work * Discuss alternatives with the patient * Provide training program * Report to MDT	

Table 6: Methods & strategies used by patient and occupational therapist to realize changes in mind-brain-body performance subsystem

<table>
<tr><th colspan="5">Mind-brain-body performance (physic., psychol, mental skills)</th></tr>
<tr><th>Objectives (behavioural)</th><th>Patient behaviour</th><th>Methods</th><th>Occupational therapist behaviour</th><th>Methods</th></tr>
<tr><td>* Evaluate current (functional) situation
* Define therapeutic goals
* Define perception on work-life balance</td><td>* Participate in ability assessment
* COLLABORATE in screening dis-abilities
* be an active participant in vocational oriented therapy
* Reflect on (temporal) results
* Share reflections with MDT
* Participate consistently in vocational Rehabilitation program
* ask for repeated &/o additional information (if necessary)</td><td rowspan="2">* Self re-evaluation
* Personalize risk
* Self-affirmation tasks
* Consciousness raising
* Framing
* Modelling
* Elaboration
* Individualization
* Planning coping responses
* Set tasks an a gradient
* Tailoring</td><td>* Determine scope & limitations on functional level (ability assessment)
* Provide tailor made rehabilitation program
* Participate in multi-disciplinary teamwork</td><td rowspan="2">* Guided practice
* Verbal persuasion
* Goal setting
* Planning coping responses
* Set tasks on a gradient of differences
* Elaboration
* Shared decision making
* Framing
* Modelling
* Ergonomic analysis
* Psychosocial analysis
* Individualization
* Participatory problem solving
* Consciousness raising
* Self re-evaluation
* Environmental re-evaluation</td></tr>
<tr><td>* Define goalsetting regarding work
* Train /enhance abilities regarding work</td><td>* explore & respect functional limitations
* workability
* work hardening & work conditioning
* adaptation in work-environment &/o organisation</td><td>* Determine work-abilities
* Assist patient to define work-related choices
* Detect work requirements
* Offer program on enhancing abilities regarding requirements
* Support patient to reflect on occupational identity; -competences and -adaptation</td></tr>
</table>

Table 7: Methods & strategies used by patient and occupational therapist to realize changes in personal life situation (external factors and personal factors)

Mind-brain-body performance (physic., psychol., mental skills)				
Objectives (behavioural)	**Patient behaviour**	**Methods**	**Occupational therapist behaviour**	**Methods**
* Evaluate current (functional) situation * Define therapeutic goals * Define perception on work-life balance	* Participate in ability assessment * Collaborate in screening dis-abilities * be an active participant in vocational oriented therapy * Reflect on (temporal) results * Share reflections with MDT * Participate consistently in vocational Rehabilitation program * ask for repeated &/o additional information (if necessary)	* Self re-evaluation * Personalize risk * Self-affirmation tasks * Consciousness raising * Framing * Modelling * Elaboration * Individualization * Planning coping responses * Set tasks an a gradient * Tailoring	* Determine scope & limitations on functional level (ability assessment) * Provide tailor made rehabilitation program * Participate in multi-disciplinary teamwork	* Guided practice * Verbal persuasion * Goal setting * Planning coping responses * Set tasks on a gradient of differences * Elaboration * Shared decision making * Framing * Modelling * Ergonomic analysis * Psychosocial analysis * Individualization * Participatory problem solving * Consciousness raising * Self re-evaluation * Environmental re-evaluation
* Define goalsetting regarding work * Train /enhance abilities regarding work	* Explore & respect functional limitations * Explore workability * Organise work hardening & work conditioning * Explore adaptation in work-environment &/o organisation		* Determine work-abilities * Assist patient to define work-related choices * Detect work requirements * Offer program on enhancing abilities regarding requirements * Support patient to reflect on occupational identity; -competences and -adaptation	

Step 4. Developing program components and materials

Based on the results of the 3 previous steps, five key phases of the RTW process as described by Cook and Lukersmith [84] will be used as structure for the development of the program components and materials, with special attention to the role of the employer regarding RTW of the BC patient / worker [14;44;67;68;76]. This is the formal part of the RTW-program where the patients gradually leaves the patient-role behind and focusses on being at work, which is indicated by the use of the word ”worker”.

- Phase 1: assessment of the worker, the usual work and contextual factors (personal and environmental) which impacts on (re-)employment.

  Rice suggested that occupational therapists assist the patient in exploring different areas of concern (valuing, exploring, returning, choosing, finding, starting, keeping) in order to clarify patients' opinions, perceptions and to evaluate the current situation of the patient [46]. Therefore the occupational therapist uses 1) an intake that provides diagnostic and prognostic information; 2) assessment of the worker's capacity, including on-the-job evaluation, workplace based assessments, work simulations, physical capacity evaluation or functional capacity evaluations; 3) assessment of the workplace, including interviews with managers and/or supervisors to determine the employees' understanding of the RTW intervention, to confirm the nature of the patients' usual duties and to establish a range of suitable duties available at the workplace; and 4) workplace assessment – job analysis in order to assess the physical, cognitive, psychosocial and environmental demands of the worker's usual duties and/or potential suitable duties with the same employer [84]. Job analysis provides detailed information of tasks and skills involved, what the worker has to do, why it must be done and how this must be done.
- Phase 2: Professional OT reasoning is used to explore the match/differences between the worker and the usual work. Occupational therapists make us of their professional skills as fundament for their professional reasoning and to – thereby - connect their findings to those of the MDT [85;89]. Reasoning assists the occupational therapist to identify barriers and, where possible, strategies to minimize those barriers. This professional reasoning is not an isolated process but is performed in each phase of the intervention [85;89].
- Phase 3: Establishing short term and long term goals. The outcomes of the previous phases are discussed, using shared decision making to narrow the gap between the rhetoric and reality of client-centered occupational therapy practice [90;91]. Using the outcomes of the professional reasoning, the occupational therapist tries to predict the likely long-term goals and program-parts in the intervention, needed to achieve RTW. Included in the timeframe for RTW, these goals are identified by using shared decision making with consultation and agreement from the worker, the medical staff, the MDT, the employer and – when relevant –organizations that funds parts of the intervention or adaptations.
- Phase 4: tailored interventions are developed by carefully setting up the steps that result from the preceding phases. To be reach sustainable RTW, the occupational therapist and the patient must communicate (respecting legal and professional rules) with employers and other stakeholders on legislative level (e.g. social insurance provider) [44]. The intervention plan as described is broken down to separated steps and the included short term goals, combined in tailored short-term programs. With the occupational therapist as case-manager, the patient/worker, relevant stakeholders then collaborate to realize the short-term goals step by step, aiming finally on the long-term goals (see

phase 3). Enhancing work performance and safety within existing tasks can be a specific short term goal of a program part of the intervention that can be realized at the workplace and/or in the rehabilitation centre (e.g. physiotherapy aiming at enhancing strength when using a tool). Strategies should include 1) a therapeutic program in which the actions, timeframe and tasks are well reasoned and that provides the means to assist the worker to return to tasks that fit as closely as possible to patients' abilities; 2) eventual modification of the environment, tasks, tools or equipment that can be necessary in order to enhance the fit between worker and the work; 3) education or training, preferably incorporated in program parts of the intervention to ensure the worker learns to use skills that are needed to undertake new tasks, to make correct use of new equipment, and to behave in a safe way when working in an adapted environment.

- Phase 5: Step by step, from setting off on, the program as described in phase 4 will be executed following the tailored RTW-process as agreed upon by all stakeholders. The occupational therapist monitors, measures and reviews goals and program-steps in the intervention to secure the tailor-made approach of each program-step of the intervention.

Adjustments may be made to goals or program-items following unexpected events such as surgery, physical or psychological illness, changes in the organization at the employers' side, etc. This may require the patient to reconsider earlier decisions or the therapist to move through the five steps again in the context of new information.

5 DISCUSSION

So far there is little evidence for implementation of OT in supporting BC patients' (labour-) participation [92;93]. Indicating the parallels that exist between the development of health promotion (from which IM originated) and the occupational concerns of OT, there is a clear and positive link between client centred OT practice and health promotion [94]. Using the first 4 steps of IM, a RTW intervention was developed consisting of 5 phases that enables the occupational therapist to collaborate with the BC patient and other relevant stakeholders in (labour) participation. Key features to be taken into account are: 1) selection of BC patients that would benefit from the intervention; 2) assessments of the worker by the occupational therapist, 3) professional OT reasoning to determine a possible match between worker and work including communication with the employer and workplace visits; 4) involvement of all stakeholders in goal-setting and 5) developing tailor made goal-oriented actions using a step by step execution of the RTW process, including continuously evaluation and adjustments of goals and actions.

In order to be successful, the RTW intervention must take certain conditions into account and be aware for specific risks.

5.1 Conditions

When setting up an intervention aiming at support BC patients in labour participation, occupational therapists should be integrated in the specialised multidisciplinary (oncology-) team that takes care for medical and functional rehabilitation of those patients. The goal setting of those rehabilitation efforts should consist of tailor-made support programs and make use of case-management [95]. All stakeholders that are part of the RTW process of an individual BC patient should be working together aiming at realize the goals they agreed upon, with the goal-setting of the BC patient as a starting point and in full respect of legislation in force.

Occupational therapist are not only part of the therapeutic setting of the patient (in care and rehabilitation) but are also part of the (occupational health-)team who collaborate on the workplace to follow up evolutions and assist in setting up adequate solutions aiming on RTW in a healthy and safe way, respecting workplace specific risk hazards. By doing so, occupational therapists are assisting the BC patients in bridging the gap between healthcare and workplace.

5.2 Risks

Although OT literature unanimously advocates for a strong involvement and commitment of patients in setting up a RTW process, results of other research indicate possible risks to such an approach. Tiedtke et al warned for expectations that are not well discussed between stakeholders, leaving both patient and employer with unpronounced concerns and thereby risking to result in unrealised reintegration [14;15]. Disappointment and disengagement of patients and other stakeholders can occur when activation strategies are too strict: instead of including people, they have excluding consequences [96]. Maiwald found that the opposite of what was mentioned could occur in cases in which lack of management involvement (sometimes caused by dearth of legislation) and flexibility of stakeholders occurs together with lack of strictness regarding taking responsibility by stakeholders (particularly the health care and re-integration professionals) [97].

Based on conditions and risks indicated by research, occupational therapists that are guiding RTW should be aware of 1) the high importance that must be given to respect all stakeholders' opinions and roles, including the role of the occupational physician and of the social insurance physician; and 2) the important role they have as participant (from the care side) and coach (from the workplace side) in bridging the gap between the two sides of the BC's reality regarding RTW.

Therefore, the OT intervention developed in this study should be evaluated in field research, aiming at building understanding of best – evidence based - practice for OT assistance in maintaining and/or restoring participation of BC patients. Additionally, this could contribute to evolution in Belgian social insurance policy by inventorying individual and societal possible effects of enhanced RTW in BC patients.

6 CONCLUSIONS

IM was found to be a useful method to develop a specific OT oriented RTW intervention aiming at bridging the gap between health care and the workplace identifying OT as facilitators. The IM based intervention allows all stakeholders in the RTW process for BC patients to collaborate together to respect a step-by-step process that takes every stakeholder's issues into account and that aims to reach the goals they agreed upon. Focusing on maintaining or restoring labour participation, this process can support BC patients restoring QoL as they move on from being a patient to becoming a survivor.

Author's contributions:

ADR, RC and HD participated intensively in the discussion sessions that are mentioned in the method section of this paper. LG and EVH questioned the outcomes of the discussions; the choices made in the development process and both were, likewise ADR and RC, involved in redaction of the text that was written by HD.

Acknowledgement:

The authors wish to thank "Kom Op Tegen Kanker" for the funding of this research.

7 REFERENCE LIST

(1) Pauwels EEJ, Charlier C, De Bourdeauhuij I, Lechner L, Van Hoof E. Care needs after primary breast cancer treatment. Survivors' associated sociodemographic and medical characteristics. psycho-oncology 2011 Aug 17;22(1):125-32.

(2) Tiedtke C, Dierckx de Casterlé B, de Rijk A, Christiaens MR, Donceel P. Breast cancer treatment and work disability: patient perspectives. Breast 2011;20(6):534-8.

(3) Tiedtke C, Knops L, Désiron H, Dierckx de Casterlé B, Donceel P, de Rijk A. Supporting Return-to-work in the face of legislation: Stakeholders' Experiences with Return-to-Work after Breast Cancer in Belgium. Journal of Occupational Rehabilitation 2011;22(2):241-51.

(4) Désiron HAM, Donceel P, de Rijk A, Van Hoof E. A Conceptual-Practice Model for Occupational Therapy to Facilitate Return to Work in BC patients. Journal of Occupational Rehabilitation 2013 Feb 20;23(4):516-26.

(5) Désiron HAM, Knippenberg E, Willems B, Neerinckx E. Occupational therapy for breast cancer survivors: improving quality of life by return-to-work assistance. Journal of Rehabilitation Medicine 2008 Jun;135-6.

(6) Mols F, Vingerhoets AJJM, Coebergh JW, van de Poll-Franse LV. Quality of life among breast cancer survivors: a systematic review. Eur J Cancer 2005 Oct 13;2005(41):2613-9.

(7) Nachreiner NM. Successful return to work for cancer survivors. AAOHN J 2007;55(7):290-5.

(8) Tamminga S, de Boer A, Verbeek J, Taskila T, Frings-Dresen M. Enhancing return-to-work in cancer patients, development of an intervention and design of a randomised controlled trial. BMC Cancer 2010;10(1):345.

(9) Désiron HAM, Biesmans K, Reyskens A. Ergotherapeutische Methodiek in Oncologische Revalidatie (EMIOR). 2012. Report No.: ESF project nr 2144. http://esf-agentschap.be/nl/projectenkaart/emior-ii

(10) Désiron HAM, Donceel P, Van Hoof E, de Rijk A. What is the value of occupational therapy in return to work for breast cancer patients? A qualitative inquiry among experts. Eur J Cancer Care (Engl) 2014 Jun 24;24(2):267-80.

(11) Tiedtke C, de Rijk A, Donceel P, Christiaens M.R., Dierckx de Casterlé B. Survived but feeling vulnerable and insecure: a qualitative study of the mental preparation for RTW after breast cancer treatment. BMC Public Health 2012 Jul 23;2012(12):538.

(12) de Boer AGEM. Work ability and return-to-work in cancer patients. British Journal of Cancer 2008;98(8):1342-7.

(13) Tiedtke C, de Rijk A, Dierckx dC, Christiaens MR, Donceel P. Experiences and concerns about 'returning to work' for women breast cancer survivors: a literature review. psycho-oncology 2009 Oct 12;2010(19):677-83.

(14) Tiedtke C, Donelly M, de Rijk A, Dierckx de Casterlé, B. Return to work following breast cancer treatment: the employers' side. Journal of Occupational Rehabilitation 2014;24(3):399-409.

(15) Tiedtke C, Dierckx de Casterlé, B., Donelly M, de Rijk A. Workplace support after breast cancer treatment: recognition of vulnerability. Disabil Rehabil, 2014;Early Online: 1-7.

(16) Godderis L, Johannik K, Mylle G, Bulterys S, Moens G. Epidemiological and performance indicators for occupational health services: a feasibility study in Belgium. BMC Health Serv Res 2014 Sep 19;14(1):410.

(17) Désiron H, Donceel P, de Rijk A, Van Hoof E. Conceptual occupational therapy model aiming on return to work in breast cancer patients. Journal of Occupational Rehabilitation 2012;23(4):516-26.

(18) Désiron H. Occupational therapy and return to work for breast cancer survivors. WFOT Bulletin 2010;61:45-51.

(19) Hoving JL, Broekhuizen ML, Frings-Dresen MH. Return to work of breast cancer survivors: a systematic review of intervention studies. BMC Cancer 2009;9:117.

(20) Johnsson A. Predictors of return to work ten months after primary breast cancer surgery. Acta Oncol 2009;48(1):93-8.

(21) Johnsson A. Factors influencing return to work: a narrative study of women treated for breast cancer. Eur J Cancer Care (Engl) 2010;19(3):317-23.

(22) Nilsson M. Return to work after breast cancer: women's experiences of encounters with different stakeholders. Eur J Oncol Nurs 2011;15(3):267-74.

(23) Tiedtke C. Return to work experiences after breast cancer. Leuven: Leuven University Group Biomedical Sciences; Faculty of Medicine -Department of Public Health and Primary Care, Occupational, Environmental and Insurance Medicine; 2013.

(24) Ammendolia C, Cassidy D, Steensta I, Soklaridis S, Boyle E, Eng S, et al. Designing a workplace return-to-work program for occupational low back pain: an intervention mapping approach. BMC Musculoskelet Disord 2009;10:65.

(25) Detaille S, van der Gulden J, Engels J, Heerkens Y, van Dijk F. Using intervention mapping (IM) to develop a self-management programme for employees with a chronic disease in the Netherlands. BMC Public Health 2010;10(1):353.

(26) Munir F, Kalawsky KEA, Wallis DJ, Donaldson-Feilder E. Using intervention mapping to develop a work-related guidance tool for those affected by cancer. BMC Public Health 2013;13(6).

(27) van Oostrom SH, Anema JR, Terluin B, Venema A, de Vet HC, van Mechelen W. Development of a workplace intervention for sick-listed employees with stress-related mental disorders: Intervention Mapping as a useful tool. BMC Health Serv Res 2007;15(7):127.

(28) Vermeulen SJ, Anema JR, Schellart AJ, van Mechelen W, van der Beek AJ. Intervention mapping for development of a participatory return-to-work intervention for temporary agency workers and unemployed workers sick-listed due to musculoskeletal disorders. BMC Public Health 2009;l 2(9):216.

(29) Vonk Noordegraaf A, Huirne JAF, Pittens C, van Mechelen W, Broerse JEW, Brölmann HAM, et al. eHealth program to empower patients in returning to normal activities and work after gynecologival surgery: intervention mapping as a useful method for development. Journal of Medical Internet Research 2012;14(5 / e124).

(30) Rick O, Kalusche EM, Dauelsberg T, König V, Korsukéwitz C, Seifart U. Reintegrating Cancer Patients Into the Workplace. Deutsches Arzteblad International 2012 Oct 19;109(42):702-8.

(31) McEachan RR, Lawton RJ, Jackson C, Conner M, Lunt J. Evidence, theory and context: using intervention mapping to develop a worksite physical activity intervention. BMC Public Health 2008;22(8):326.

(32) World Federation of Occupational Therapists. Aims of Occupational Therapy. http://www wfot org 2011 [cited 2014 Oct 5];(World Federation of Occupational Therapists)Available from: URL: http://www.wfot.org/Portals/0/PDF/STATEMENT%20ON%20OCCUPATIONAL%20THERAPY%20300811.pdf

(33) Bartholomew LK, Parcel GS, Kok GJ. Intervention mapping: a process for developing theory- and evidence-based health education programs. Health Educ Behav 1998;25:545-63.

(34) Bartholomew LK, Parcel GS, Kok GJ, Gottlieb NH. Intervention Mapping: designing theory and evidence-based health promotion programs. 2001.

(35) Bartholomew LK, Parcel GS, Kok G, Gottlieb NH. Planning health promotion programs : an intervention mapping approach. San Francisco: Jossey-Bass; 2006.

(36) Désiron HAM, de Rijk A, Van Hoof E, Donceel P. Occupational therapy and return to work: a systematic literature review. BMC Public Health 2011;2011(11):615.

(37) Désiron HAM, Knippenberg E, Willems B, Neerinckx E. Occupational therapy for breast cancer survivors: improving quality of life by return-to-work assistance. Journal of Rehabilitation Medicine 2008 Jun;135-6.

(38) Désiron HAM, de Rijk A, Van Hoof E, Donceel P. Occupational therapy and return to work: a systematic literature review. BMC Public Health 2011;2011(11):615.

(39) Désiron HAM, Donceel P, de Rijk A, Van Hoof E. A Conceptual-Practice Model for Occupational Therapy to Facilitate Return to Work in BC patients. Journal of Occupational Rehabilitation 2013 Feb 20;23(4):516-26.

(40) Désiron HAM, Donceel P, Van Hoof E, de Rijk A. What is the value of occupational therapy in return to work for breast cancer patients? A qualitative inquiry among experts. European journal of cancer care 2014 Jun 24;24(2):267-80.

(41) Bartholomew LK, Parcel GS, Kok G, Gottlieb NH. Planning health promotion programs: an Intervention Mappping approach. San Francisco, CA: Jossey-Bass; 2006.

(42) Homl M, Rogers JC, Stone R.G. Overview of intervention section II : Person-task-environment interventions: a decision-making guide. In: Schell BAl, Blesedell Crepeau El, Boyt Schell B.A., editors. Willard and Spackman's Occupational Therapy. 10 ed. Lippincott Williams & Wilkins; 2009.

(43) Bains M, Yarker J, Amir Z, Wynn P, Munir F. Helping cancer survivors return to work: what providers tell us about the challenges in assisting cancer patients with work questions. Journal of Occupational Rehabilitation 2011;22(1):71-7.

(44) Coole C, Birks E, Watson P, Drummond A. Communicating with Employers: Experiences of Occupational Therapists Treating People with Musculoskeletal Conditions. J Occup Rehabil 2014;24(3):585-95.

(45) Crompton Se. Occupational therapy intervention in cancer. Guidance for professionals, managers and decision-makers. London: College of Occupational Therapists, HOPE: the Specialist Section of Occupational Therapists in HIV/AIDS, Oncology, Palliative Care and Education; 2004.

(46) Rice VJ. Restoring competence for the worker role. In: Vining Radomski MV, Trombly Latham CA, editors. Occupational Therapy for Physical Dysfunction. Seventh ed. Philadelphia: Wolters Kluwer Health / Lippincott Williams & Wilkins; 2014. p. 871-908.

(47) Shaw L. Are you listening? External challenges in work rehabilitation practice: enabling return to work through a client-centred approach. Occupational Therapy Now 2000 Sep 2;2(5):13-5.

(48) Shaw W, Hong QN, Pransky G, Loisel P. A literature review describing the role of return-to-work coordinators in trial programs and interventions designed to prevent workplace disability. J Occup Rehabil 2008;18:2-15.

(49) Silver JK, Gilchrist LS. Cancer Rehabilitation with a Focus on Evidence-Based Outpatient Physical and Occupational Therapy Interventions. American Journal of Physical Medicine & Rehabilitation 2011;90(5):S5-S15.

(50) Söderback I, Petterson I, Von Essen L, Stein F. Cancerpatients' and their physicians' perceptions of the formers' need for occupational therapy. Scandinavian journal of occupational therapy 2000 Mar 24;7:77-86.

(51) Amir Z, Moran T, Walsh L, Iddenden R, Luker K. Return to paid work after cancer : a British experience. J Cancer Surviv 2007;1:129-36.

(52) Taskila T, Lindbohm ML, Lehto US, Hakanen J, Hietanen P. Cancer survivors' received and needed social support from their work place and the occupational health services. support care cancer 2005.

(53) Feuerstein M, Todd BL, Moskowitz MC, Bruns GL, Stoler MR, Nassif T, et al. Work in cancer survivors: a model for practice and research. J Cancer Survivor 2010;(4):415-37.

(54) Stout NL, Binkley JM, Schmitz KH, Andrews K, Hayes SC, Campbell KL, et al. A prospective surveillance model for rehabilitation for women with breast cancer. Cancer 2012 Apr 15;2012:2191-200.

(55) Pauwels E, Van Hoof E, Charlier C, Lechner L, Bourdeaudhuij I. Transition into survivorship. A qualitative study of breast cancer survivors' and intimate partners' experiences of the post-treatment phase and preferences regarding on-line support. Ghent: Social Health Sciences, Ghent University & Psychological Sciences, Free University of Brussels; 2012.

(56) Hewitt M, Greenfield S, Stovall E. From Cancer Patient to Cancer Survivor: Lost in Transition. 2005Available from: URL: http://www.nap.edu/openbook.php?record_id=11468

(57) Tiedtke C. Survived but feeling vulnerable and insecure: a qualitative study of the mental preparation for RTW after breast cancer treatment. BMC Public Health 2012;12:538.

(58) Tamminga SJ. Enhancing return to work of cancer patients. Amsterdam: Faculty of Medicine of the University of Amsterdam (UvA); 2012.

(59) de Boer AGM, Taskila T, Tamminga S, Frings-Dresen M, Feuerstein M, Verbeek J. Interventions to enhance return-to-work for cancer patients. [The Cochrane Library]. 2009. The Cochrane, Library 2009, Issue 1, The Cochrane Collaboration. Published by JohnWiley & Sons, Ltd. 4-2-2011.

(60) Mehnert A, Härter M, Koch U. Langzeitfolgen einer Krebserkrankung Anforderungen an die Nachsorge und Rehabilitation. Bundesgesundheitsblatt - Gesundheitsforschung - Gesundheitsschutz 2012;55(4):509-15.

(61) Mehnert A. Employment and work related issues in cancer survivors. critical reviews in oncology/hematology 2011;2011(77):109-30.

(62) Roelen CAM, Koopmans PC, van Rhenen W, Groothoff JW, van der Klink JJL, Bültmann U. Trends in return to work of breast cancer survivors. Breast Cancer Res Treat 2011;(128):237-42.

(63) Tamminga SJ, De Boer AGEM, Verbeek JHAM, Frings-Dresen MHW. Return-to-work interventions into cancer care: a systematic review. Occup Environ Med 2010;67(9):639-48.

(64) Désiron HAM, Knippenberg E, Willems B, Neerinckx E. Occupational therapy for breast cancer survivors: improving quality of life by return-to-work assistance. Journal of Rehabilitation Medicine 2008 Jun;135-6.

(65) Munir F, Kalawsky KEA, Wallis D, Donaldson-Feilder E. Using intervention mapping to develop a work-related guidance tool for those affected by cancer. BMC Public Health 2013;13(6).

(66) van Oostrom SH. Development of a workplace intervention for sick-listed employees with stress-related mental disorders: Intervention Mapping as a useful tool. BMC Health Serv Res 2007;7:127.

(67) Grunfeld EA. The organisational perspective on the return to work of employees following treatment for cancer. Journal of Occupational Rehabilitation 2008 Dec 18;18(4):381-8.

(68) Pryce J. Cancer survivorship and work: symptoms, supervisor response, co-worker disclosure and work adjustment. Journal of Occupational Rehabilitation 2007 Mar 17;17(1):83-92.

(69) Williams RM. Perspectives on workplace disability management: a review of the literature. work 2002 Jan 19;19(1):87-93.

(70) Vockins H. Occupational Therapy intervention with patients with breast cancer: a survey. Eur J Cancer Care (Engl) 2004;2004(13):45-52.

(71) Baron KB, Littleton MJ. The model of human occupation: a return to work case study. work 1999;12(1):3-12.

(72) Graham J. Occupational therapy in Australia: a changing profession and changing attitudes. british journal of occupational therapy 1990 Sep;53(9):370-3.

(73) Marini I. What rehabilitation counselors should know to assist Social Security beneficiaries in becoming employed. work 2003;21(1):37-43.

(74) Paquette S. Return to work with chronic low back pain: using an evidence-based approach along with the occupational therapy framework. work 2008;31(1):63-71.

(75) Wright M. Early return to work & occupational therapy. OT practice 1997 May 2;2(5):36-42.

(76) Nieuwenhuijsen K. Enhanced provider communication and patient education regarding return to work in cancer survivors following curative treatment: a pilot study. Journal of Occupational Rehabilitation 2006 Dec 16;16(4):647-57.

(77) Morrison TL, Thomas RL. Survivors' experiences of return to work following cancer: A photovoice study: Expériences vécues par des survivantes á un cancer face á leur retour au travail : Une étude photovoice. Canadian Journal of Occupational Therapy 2014 Jun 1;81(3):163-72.

(78) Bartholomew LK, Parcel GS, Kok GJ. Intervention mapping: a process for developing theory- and evidence-based health education programs. Health Educ Behav 1998;25:545-63.

(79) Islam T, Dahlui M, Majid H, Nahar A, Mohd Taib N, Su T, et al. Factors associated with return to work of breast cancer survivors: a systematic review. BMC Public Health 2014;14(Suppl 3):S8.

(80) Désiron H, Knippenberg E, Willems B, Claes G, Neerinckx E. Occupational therapy for breast cancer survivors: improving QOL by return-to-work assistance. 2008 p. 135-6.

(81) Curtin M. Enabling skills and strategies. In: Curtin M, Molineux M, Supyk-Mellson J, editors. Occupational therapy and Physical dysfunction / enabling occupation. sixth ed. Edinburgh: Churchill Livingstone Elsevier; 2010. p. 111-20.

(82) Cook C, Lukersmith S. Work rehabilitation. In: Curtin M, Molineux M, Supyk-Mellson J, editors. Occupational therapy and physical dysfunction Enabling Occupation. 6 ed. Edingburgh: Churchill Livingstone Elsevier; 2010. p. 391-408.

(83) Rogers JC. Occupational reasoning. In: Curtin M, Molineux M, Supyk-Mellson J, editors. Occupational Therapy and Physical Disfunction / enabling occupation. Sixth edition ed. Edinburgh: Churchill Livingstone Elsevier; 2010. p. 57-65.

(84) Hoefsmit N, Houkes I, Nijhuis FJN. Intervention characteristics that facilitate return to work after sickness absence: a systematic literature review. Journal of Occupational Rehabilitation 2012 Dec 31;22(4):462-77.

(85) Shaw W. A literature review describing the role of return-to-work coordinators in trial programs and interventions designed to prevent workplace disability. J Occup Rehabil 2008;18(1):2-15.

(86) Kielhofner G. Research in Occupational Therapy: Methods of Inquiry for Enhancing Practice. Chicago: F.A.Davis Company; 2006.

(87) Cohn ES, Coster W. Unpacking our theoretical reasoning. In: Boyt Schell B.A., Gillen G, Scaffa ME, Cohn ES, editors. Willard and Spackan's Occupational Therapy, UNit IX occupational Performance theories of practice. 12 ed. Philadeplhia: Wolters KLuwer / Lippincott / William & Wilkins; 2014. p. 477-93.

(88) Duncan EAS. Shared decision-making skilss in practice. In: Duncan EAS, editor. Skills for practice in occupational therapy.Edinburgh: Churchill Livingstone Elsevie; 2009. p. 41-54.

(89) Coutu MF, Légaré F, Durand MJ, Corbière M, Stacey D, Bainbridge L, et al. Operationalizing a Shared Decision Making Model for Work Rehabilitation Programs: A Consensus Process. J Occup Rehabil 2015;25(1):141-52.

(90) Duncan EAS. Developing research in practice. In: Duncan EAS, editor. Skills for Practice in Occupational Therapy.Edinburgh: Churchill Livingstone Elsevier; 2009. p. 267-78.

(91) Carpenter C, Suto M. Qualitative research for Occupational and Physical therapists; a practical guide. Oxford: Blackwell Publishing; 2008.

(92) Dixey R. Health promotion and occupational therapy. In: Curtin M, Molineux M, Supyk-Mellson J, editors. Occupational Therapy and Physical Dysfunction / Enabling Occupation. Sixth ed. Edinburgh: Chruchill Livingstone Elsevier; 2010. p. 239-52.

(93) Bultmann U. Coordinated and tailored work rehabilitation: a randomized controlled trial with economic evaluation undertaken with workers on sick leave due to musculoskeletal disorders. Journal of Occupational Rehabilitation 2009 Mar 19;19(1):81-93.

(94) Van Hal LBE, Meershoek AM, Nijhuis FJN, Horstman K. The 'Empowered Client' in Vocational Rehabilitation: The Excluding Impact of Inclusive Strategies. Health Care Anal 2012;(20):213-30.

(95) Maiwald K, Meershoek AM, de Rijk AE, Nijhuis FJN. How policy on employee involvement in work reintegration can yield its opposite: employee experiences in a Canadian setting. Disabil Rehabil 2013;35(7):527-37.

CHAPTER 6: GENERAL DISCUSSION

Our study described the development of an occupational therapy (OT) guided return to work (RTW) intervention for breast cancer (BC) patients in Belgium (Flanders). The increasing number of BC patients at working age puts demands on health care, more specifically on RTW guidance that is currently not formally included in Belgian health care services. The thereby unmet needs of BC patients regarding support in RTW were set as a starting point of the development process. We hypothesised that an evidence based OT intervention (OTI) can be developed that i) addresses BC survivors' needs, ii) can be implemented in current health care, and that iii) supports successful RTW for BC patients.
This chapter starts by addressing the research questions that were defined in chapter 1:

1) What is the role for OT in supporting RTW in BC patients (in the Belgian (Flanders) social- and legislative context)?
2) What should be the specific content of and approach for an OT intervention guiding a RTW-trajectory for BC patients in Belgium (Flanders)?

Reflection on strengths and weaknesses of the research and methodological considerations are added in each section. Finally, conclusions and recommendations for further research end this chapter.

1 RESEARCH QUESTION 1: WHAT IS THE ROLE OF OT IN SUPPORTING RTW FOR BC PATIENTS IN BELGIUM (FLANDERS)?

As a result of our research, the role of OT in supporting RTW for BC patients should be embedded in health care as part of the multidisciplinary teamwork in which all disciplines collaborate with the BC patients to regain QoL. The specific contribution that OT can provide should consist of: i) identifying the BC patients in need for RTW support due to obstacles they experience to maintain or resume labour participation and empower them in their RTW efforts, ii) assisting those patients to restore (work-) abilities by setting up tailored (OT-) programs, and iii) providing guidance and practical support in "getting back to work" by coordinating the RTW process starting from healthcare and finishing at the workplace.

In line with the research questions posed in chapter 1, this paragraph will first elaborate on the effects of OT in supporting RTW and on the contribution that OT could make to RTW guidance of BC patients. Next, we go into the components of good practice for an OT guided RTW intervention for BC patients.

1.1 Effects of OT in supporting return to work

The findings of chapter 2 are in favour of using OT in a multidisciplinary rehabilitation when targeting RTW. The effect of OT, measured at follow-up in terms of the number of sick-leave days or in terms of employment status, showed good results but only weak positive evidence was found for the effectiveness of OT on RTW, because of the low number of studies done, the methodological weaknesses and the variety patient populations (chapter 2). The results of chapter 3 showed that the experts expect positive effects for OT in the specific case of BC patients based on their clinical experiences. The findings in the research presented in chapter 2 and 3 support our assumption that OT will contribute to RTW for BC patients. However, no higher scientific evidence than expert opinions could be found.

Despite the search-strategy in chapter 2 indicating a large amount of descriptive literature on OT and RTW (n= 1532), no studies were found that provided evidence on effects of OT in RTW particularly for BC patients. Six studies were identified, revealing that better RTW results were achieved when rehabilitation focuses on functionality with OT included in the MDT treatment. Two of the included studies documented positive impact on QoL as result of RTW [1;2]. This weak scientific evidence hinders implementing RTW support in different populations [1-8].

The experts in chapter 3 expect OT to be able to fill in their expectations regarding their patients' unmet needs, based on their experiences in RTW with other patient populations and on the need for support in RTW they perceive in their clinical practice with BC patients. Research in other patient populations indicates the additional role of OT on behalf of RTW support in relation to current expertise in health care [9-15]. To clarify whether OT can respond efficiently and effectively to the clinicians' expectations on behalf of unmet RTW needs of BC patients, further research is needed.

During the timeframe of this PhD study, research published on the (potential) contribution of OT in RTW for BC patients focussed more on the content of the expected contribution of OT than on its effects on participation and QoL [9;10;13;15-21]. Clearly, effects of OT in supporting RTW (including their contribution to improvement of QoL of BC patients) remain not well studied. More specific research on effects of OT in supporting RTW in BC keeps on being an actual challenge waiting to be taken up.

1.2 Contribution of OT in supporting RTW in BC

From the moment of diagnosis on, OT contributes to set the focus of patients and other MDT members on aspects beyond medical issues, by supporting therapeutic goalsetting that include RTW (chapter 2). OT also contributes to guiding patients throughout the process to reach (or adapt) patients' initial goals whilst continuing treatment and evolving in their survivorship (see chapter 1).

Chapter 2 shows that OT contributes in helping patients to identify barriers to RTW, keep the RTW plan on track and strive to obtain the collaboration from healthcare providers and employers by rigorously following the course of the RTW process.

Based on descriptive literature and the profession's definition (see chapter 1) OT could contribute to the RTW process by simultaneously collaborating with i) survivors, to explore their readiness-to-work (e.g., physically, cognitively, and emotionally); ii) workplaces, to determine their readiness to provide the necessary support; and iii) other stakeholders (e.g., social security) as suggested by Stergiou-Kita [20]. Members of the MDT (e.g., physical therapists, nurses, physiotherapists, psychologists, social workers) increasingly prioritize the importance of person, environment, and occupational participation in regard of health. Our study did not explore nor compare competencies of other (occupational) health care professionals since we focused on the potential role of OT regarding RTW support for BC patients. Consequently, other health care professionals could also support RTW (e.g., the role of specialised nurses as investigated by Taminga [22;23]). The findings in chapter 1 and experiences in other patients' populations in chapter 2 provide substantiation for the assumption that occupational therapists are

capable to take the role of RTW-coordinator. Without doubt, more research is needed to support these expert opinions with scientific results in order to define the impact of OT on RTW.

1.3 Good practice regarding OTI for RTW for BC patients

Based on our findings, a structural and systematic approach regarding RTW for BC patients is – at date – not present in Belgium (FL). The OTI that were described in the studies included in chapter 2 indirectly provided indications on potential content of a RTW focused OTI, but did not provide evidence in BC. With explicitly highlighting workplace interventions, the results of chapter 2 suggested that ingredients of OT-guided RTW interventions should be: work simulations; work hardening; and individual work place interventions. Regarding healthcare-based input chapter 3 mentioned: the use of a holistic approach for the MDT, embedding OT in the MDT; participative goal-setting; vocational guidance and vocational rehabilitation; observation of the patient; liaison counselling; and contacts with all stakeholders involved in an individual patient's reality.

The current work suggests that it is important to design RTW support as a process that enables patients together with caregivers and employers to cope with evolutions in patients' health status and their effect on patients' experiences [9;10;13;15-22;24-27]. Such RTW support ought to be flexible, aiming to contribute more precisely to individual patient's QoL [28].

The shift in patients' experiences that potentially occurs as time goes by during survivorship, should be explicitly taken into account, as well as the changes in the meaning of work for BC patients before and after diagnosis that might result from their encounters during the RTW process [29-37]. The complex reality of BC patients and evolutions that occur in their social and legal situation during survivorship must induce the tailoring of the RTW support [13;38-40].

The experts in chapter 3 argued for such a BC patient tailored approach, based on: i) the broad variety of needs of individual BC patients due to medical treatment and its side-effects; ii) the patient's psycho-social consequences; and iii) the social and economic consequences on their lives at different time moments during survivorship. Such an approach enables a better 'fit' between the RTW support to the specific individual person-, illness- and job-related issues of each individual BC patient in need of RWT support [13;29;33;34;41-43]. Clearly, in order to develop 'good practice' in RTW support for BC patients, it is essential to identify barriers and facilitators that might influence the best possible way to create that 'fit'.

Barriers for good practice in RTW support for BC patients

In chapter 3, we identified barriers that mostly hindered RTW for BC on a societal level: i) the limited access for BC patients to rehabilitation facilities, and ii) the financial organisation of care that does not allow Belgian healthcare providers to intervene at the BC patient's workplace. Friesen found that delays of all types in processing or delivery of information or treatment and ineffective communication among stakeholders were significant barriers to RTW [44]. Stergiou-Kita indicated that presence of on-going

cancer or treatment related impairments or symptoms (e.g., lymphedema, fatigue, cognition impairment, emotional symptoms such as anxiety and stress) are factors that could delay individuals' RTW process or negatively affect their ability to retain paid employment [13]. The conformity on factors that are part of the personal system between the findings of Islam and in chapter 3 strengthen the importance that must be assigned to those barriers when designing a OTI for RTW support for BC patients since this enables a more precise tailoring of the RTW approach [45].

In addition to these research findings on barriers, the experts (chapter 3) highlighted the importance of contextual factors (e.g.; legislative and legal issues, social benefits) that can hinder the RTW process.

Facilitators for good practice in RTW support for BC patients

In chapter 3, we identified two facilitators to RTW: i) the inclusion of OT in healthcare for BC patients and embedded in the MDT, and ii) assistance for BC patients at their workplace. Integrated in multidisciplinary teamwork, OT interventions should have a holistic and client-centred approach, start early in the rehabilitation process, include workplace visits and contacts with relevant stakeholders, and use goal-setting to start up tailor made rehabilitation, linking assessment of abilities and work. As result of their limited experience in RTW support for BC patients, the experts' opinions in chapter 3 were rather general but they were in line recent literature that provides more precise indications. In accordance with the experts' opinions, Stergiou-Kita et al. indicate healthcare providers' support as facilitator for receiving sick leave benefits and workplace accommodations [13]. Stergiou-Kita et al additionally found that the type of work and job flexibility were identified as facilitators in RTW, provided that i) the work was less stressful, ii) matched survivors' physical and cognitive abilities, and iii) enabled survivors to choose their work tasks according to their abilities or work that could be gradually resumed [13]. The experts' opinions on establishment of RTW actions at the workplace; effective communication between all stakeholders and multidisciplinary teamwork as well as trust and credibility among stakeholders are in line with the findings by Friesen regarding the importance of human interaction and organisational structures when RTW is at stake [44].

There was also accordance between the opinions of the expert in chapter 3 and the findings of Islam who concluded that social-, family- and employer support, and financial independency were key facilitators in enabling BC patients to maintain of resume paid work [13;45]. The review by Stergiou-Kita et al. furthermore revealed that the absence of the above-mentioned hindering symptoms was notified as a key facilitator [13]. Other facilitators identified in chapter 3 and described in literature, were: the positive motivation of the individual cancer survivor regarding work, and the presence of work support (e.g., work adjustments, a supportive work environment and support from family and friends) [13].

Components of good practice in RTW support for BC patients

The relevant systems and elements for 'good practice' in RTW support for BC patients that resulted from our research (chapter 3) and additional literature are described here below and summarized in figure 2. The systems (health care system, personal system, legislative and legal system and workplace

system) (see figure 1 in chapter 1) that compose the context of RTW-support are used to structure the elements of potential 'good practice' for an OT guided RTW intervention for BC patients.

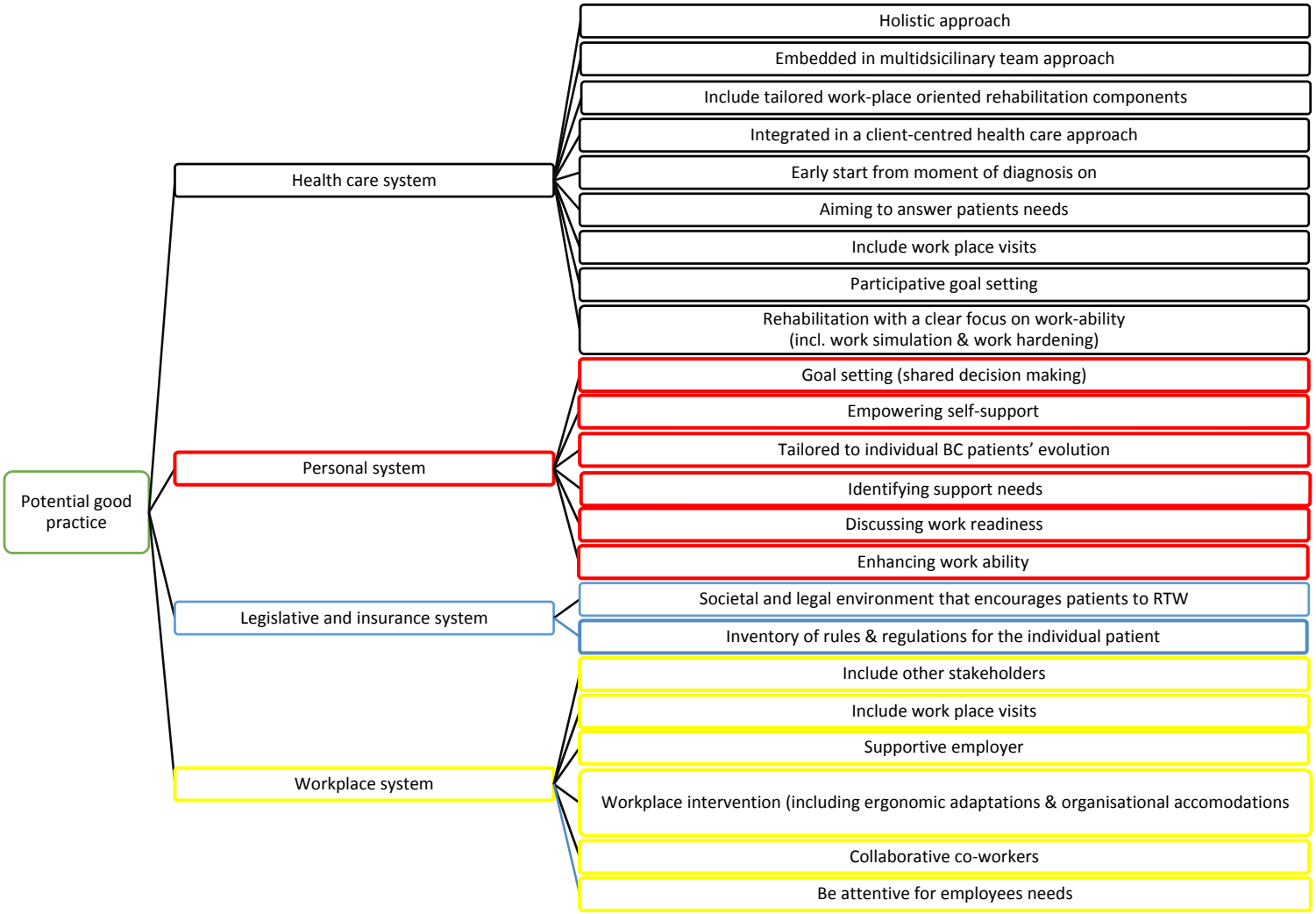
Healthcare system: Our findings in chapter 2 and 3 suggest that it is useful to integrate OT in healthcare services that have a client-centred, holistic and multidisciplinary approach. We also found that such a service should encompass all life domains of importance to the BC patient, since they might influence the patient's ability to work. Unfortunately, as indicated in chapter 3 and 4, specific specialised healthcare providers with a focus on RTW are not yet systematically integrated in current Belgian care for BC patients.

An OT guided RTW intervention should start early (i.e. from the moment of diagnosis), be based on participative goal setting realised by collaboration between the BC patient, the MDT (including the occupational therapist), and aim to address the individual BC patient's needs. Our studies highlight elements to be part of MDT practice (e.g., empowering self-support; identifying support needs; enhancing work ability; discussing work-readiness; goal-setting by shared decision making). According to the experts in chapter 3, the specific competencies of OT could be useful when integrated in healthcare. These results are in line with other research that indicates the strong medical focus of health care and the lack of RTW support for BC patients in health care [13;46].

The role and tasks actually performed by representatives of different health and safety professions might vary greatly between European countries depending upon legislation, scope of the workplace health concept perceived by major stakeholders, enforcement practice, the level of their education, position in the occupational health infrastructure, actions undertaken by (social and/or private) insurance institutions and many other factors [47].

In Europe, the workplace-based occupational health services use the skills of many professionals such as occupational and or insurance physicians, safety engineers, occupational hygienists, nurses, ergonomists, physiotherapists, occupational therapists, middle-grade safety experts, laboratory technicians, psychologists and other. In line with the experts' opinions (chapter 3), Baker et al. advocate the concerted action of various professional and social partners at work to collaborate regarding RTW [47].

Figure 2: Summary of potential good practice for OT in guiding RTW support for BC patients



Personal system: A client-centred approach to the patient's situation is essential for providing good RTW support. Other research also emphasises on the importance of work as one of the major life domains that are affected when an adult person is diagnosed with BC cancer [25;27;34;48-53]. Although there is a wide variety in BC diagnoses, treatment and effects on individuals and their QoL, the work issue is for all patients at working age a key question with which they are confronted when diagnosed for BC [25;30;31;45;54-60].

To position the meaning of work for patients regarding the changing situation and the life-threatening disease they are facing, assistance with goal setting is clearly an important element in the RTW process. Also, a tailored RTW intervention should include the necessity to adapt the RTW support according to the changes in patients' lives during survivorship [25;27;34;50-53].

In line with our findings in chapter 3, other research indicates the relevance of detecting the BC patients who are likely to benefit from a specific, tailored, work-oriented OTI in order to provide service to those who need it and empower patients that assume to be self-supportive [61-64]. These opinions are in line with the findings of Lippens, who detected that in the 66 female BC patients that participated in the interviews of the study, the timeframe before female BC patients attempt to return to work as well as potential success in RTW success was affected by a large variety of personal factors (age, overall health status, education, self-confidence, perceived support) [65].

Workplace system: Chapter 2 showed that work simulation and work hardening are seen more as workplace-oriented rehabilitation components, and that workplace interventions (including ergonomic workplace adaptations) and individual visits to the patient at her workplace are mentioned as useful specific workplace oriented actions. Another part of potential 'good practice' should, in the opinion of the experts in chapter 3, be provided at the workplace of the patient (e.g., supportive employer, collaborative co-workers, and organisational adjustments). These findings correspond with those of other research [57;63;66-70]. The work-place based part of the 'good practice' should consist of early starting of communication between the three primary stakeholders, guided by a healthcare-based case-manager, in this case, an occupational therapist. As clarified by other research, the work-place system includes co-workers and employers who - just as the employee who survived BC - also face unexpected changes that are not easy to cope with [26;31;42;51;69;70]. Therefore, 'good practice' regarding the role of the workplace-system should not only include supportive employers' involvement, but should also pay attention to other people at the workplace (e.g., supervisors, co-workers) since this attention would indirectly improve acceptance of the patients' situation [51;69;70]. In Belgian legislation, the role of an occupational physician is to supervise issues regarding health, safety and wellbeing on behalf of maintaining employment or return to employment after a period of sick leave. They also are entitled to give advice to the employer and the patient/worker to safeguard sustainable results of these efforts.

Legislative- and Insurance system: The organisation of social insurance and legislative issues is mentioned in chapter 3 as an obstacle to RTW for BC patients. The experts advocate a societal and legal environment that encourages patients to get back to work with respect of the patient's individual

reality. The Belgian social insurance system is rather protective and provides benefits that provide income for people in sick leave, but – as indicated by the experts (chapter 3) and by governmental research, its' biggest disadvantage is the risk for patients to become trapped in the system. In their systematic review, Stergiou et al. suggest that understanding relevant workplace and human rights legislation is essential for successful RTW interventions [13]. The implementation of the NIDMAR approach that is appointed by the government, and recently organised in Belgian health care by the National Institute for Health and Disability Insurance shows the importance to create an evidence based foundation for structured RTW support for social insurance beneficiaries [14]. This implementation got set up at the end of the timeframe of this PhD study, which means that no results are available at date. This evolution also affects the role of social insurance physicians who not only follow up the period of sickleave of patients, but legally can initiate RTW efforts of patients.

Confirming our results, recent research provides more specific findings on content and process of healthcare based RTW guidance for BC patients [10;13;15;20;21;24;27;39;41;50;57]. This highlights the need for the coordinated support of healthcare and vocational professionals to be provided throughout the recovery and rehabilitation process (e.g., assistance with defining work goals; determining work readiness; determining the effect of disease and treatment on patients' work performance; suggesting workplace supports, and suggesting work adjustments).

1.4 Methodological considerations Research Question 1

The hypothesis used to set up this PhD project started from results of preparative research, indicating the unmet needs of BC patients at working age regarding RTW (chapter 1). Chapter 2 revealed that OT provides a range of work-related interventions but that specific evidence related to OT in the area of vocational rehabilitation remains somewhat limited. This PhD study contributes to scientific efforts to answer this shortcoming in OT research.

Strengths of the choices made in this PhD project are the improving of trustworthiness due to: i) a specific target group (female employed BC patients) which enables us to connect to international literature on the same target group; ii) a clear focus on the potential added value regarding RTW support of a health care provider that is not yet structurally integrated in the MDT-service for BC patients; and iii) a specific focus on one aspect in BC patients' lives (return to work) that is an essential factor in perceived QoL of BC patients at working age.

Inevitable, our efforts to avoid bias and to maintain a clear focus in our research initiated some weaknesses. Other BC patients at working age (e.g., unemployed patients, self-employed patients) were not taken into account. In further research, the developed OTI-intervention might be evaluated regarding the specific needs and (legal and social) situation of unemployed and self-employed BC patients. With the focus of this PhD study put on BC as a homogenous group, we did not differentiate between stadium, treatment and its side effects. Belgian research provided indications that could underpin a more differentiated approach [65]. However, international literature on factors that influence RTW is far from

unanimous whether aspects (e.g.; stadium of diagnosis, treatment and its side-effects) have consequences that would justify a more heterogeneous approach.

The countries, where the studies we refer to took place, have a wide variety in social and legal systems. The differences between those social and legal systems might influence use of the results that were inspirational for our study. Differences in terms and definitions of concepts used in the studies selected for chapter 2, and formulations chosen by the experts in chapter 3, might limit a clear and concise use of reproducible concepts.

Since no evidence for OT to support RTW in BC patients could be found, we were forced to take a step back and start our research by investigating evidence for OT to support RTW (chapter 2). The lack of solid scientific evidence for clinical practice of OT has been recognised by the profession worldwide, leading to an increase in the number of scientific studies [3;39;71-77]. However, more research is needed to deliver sound evidence on elements of OT in RTW and the suggested effect on patients' QoL.

Although the limited experience of the experts (chapter 3), the accordance of their opinions with the results of international research strengthen our findings. However, the lack of specific OT application of the knowledge provided by international literature supporting RTW in BC brakes evolution in clinical practice and increases the need for research in Belgium health care.

As the weak evidence we found on the effectiveness of RTW interventions that included OT in chapter 2 were conducted elsewhere in the world, we additionally needed to check for applicability of the OT guided RTW approach in the Belgian context. (see chapter 3).

This study enabled us to detect barriers and facilitators that are significant in the "real life" of Belgian BC patients and their caregivers. Moreover, the results will help us to avoid bottlenecks regarding the implementation of the developed RTW intervention in the current Belgian healthcare system. Further, it enables us to connect the developed RTW intervention to reality of the stakeholders and thereby enhance chances for a successful RTW process.

Nevertheless, the lack of BC-related RTW experience in professional practice of the Belgian (FL) experts is methodological weakness in our study. Even though the experts in chapter 3 used their professional experience in other patient populations to counsel relatives facing BC in their personal lives, the BC-specific experience that experts could rely on was rather limited. These experts' experiences were based in Flanders, which is only one of the 3 regions in Belgium. This enabled us to avoid issues (e.g.; cultural differences, translation efforts) that would have occurred when realising research in all Belgian languages (Dutch, French, German). Subsequently, this choice hinders the generalisation of our findings for use in the two other regions of the country. Inspired by empiric previous research and by clinical practice future research might elucidate practice based evidence [78-80], our focus on literature that specifically mentions (breast)cancer regarding RTW and its effect on

QoL, might have had as consequence that relevant evidence available in literature on "chronicity and RTW" was missed.

In a MDT setting, all health care providers collaborate with their patients by using all life domains to reach improvement of QoL as a final goal. Apparently, this is the case for OT when embedded in a MDT health service setting for BC patients. By focussing on the potential role of OT in supporting RTW in BC patients, the role of other health care professionals has been overlooked. Moreover, since our study focused on was investigating healthcare-based opinions, other stakeholders (e.g. employer, occupational physicians, and social insurance) were not included in chapter 3. More attention might be paid to including these stakeholders' points of view when finally describing the OTI this PhD project aimed to develop.

By using RTW as a means that is essential in QoL for BC patients at working age, this PhD project did not go into other aspects that contribute to BC patients' QoL, although there are more aspects (e.g., social activities, healthy relationships) that are important in improving QoL [28;81-85]. In research that will be set up to evaluate the OTI this PhD project strives for, all life domains will be included, in order to position the importance of RTW between all other aspects regarding the weight these aspects have in individual patient's life's during survivorship.

The criteria we used both in selecting publications (chapter 2) and in interviewing heads of OT departments (chapter 3) limited the scope of the research efforts. Only including studies that explicitly mention participation of an occupational therapist in the MDT helps to clearly determine whether or not adding OT to treatment as usual has added value regarding RTW. Even when the advantages of the choices made are obvious, such severe limitations contain the risk of being too restrictive. However, in chapter 5 we have reviewed also related empirical research to deepen our understanding of the potential added value of OT and RTW needs in BC patients and thus the proposed OTI is based on a wider range of research.

2 RESEARCH QUESTION 2: CONTENT AND APPROACH FOR AN OTI GUIDING RTW FOR BC PATIENTS IN BELGIUM (FLANDERS)

In this part of the PhD project, our research focused on the theoretical ground and approaches for the development of an OTI guiding a RTW trajectory for BC patients in Belgium.

The systematic method (Intervention Mapping) we applied to guide the development process for the RTW intervention for BC patients will be discussed.

2.1 Discussion of theory and models regarding OTI for RTW for BC patients

With the patients' needs in support for RTW as starting point, and taking the necessity in stakeholder communication into account, this PhD project referred to the overarching theoretical framework that is presented by the International Classification of Disability, Functioning and Health model (ICF model) (chapter 1). This will be discussed first, followed by the discussion on the specific OT model

"*organisation model for OT guided RTW intervention for BC patients"* (Figure 3) that was developed with the ICF as theoretical frame of reference. The subject of this PhD project (RTW for BC patients) is closely connected to the domain of vocational rehabilitation. Therefore we will reflect on other leading models in RTW support (for other patient populations).

Consequently maintaining the patients' needs as a starting point, the development process for this OTI implemented Intervention Mapping as approach since the first step of IM consists of needs assessment as starting point for the development of interventions in health behaviour and RTW.

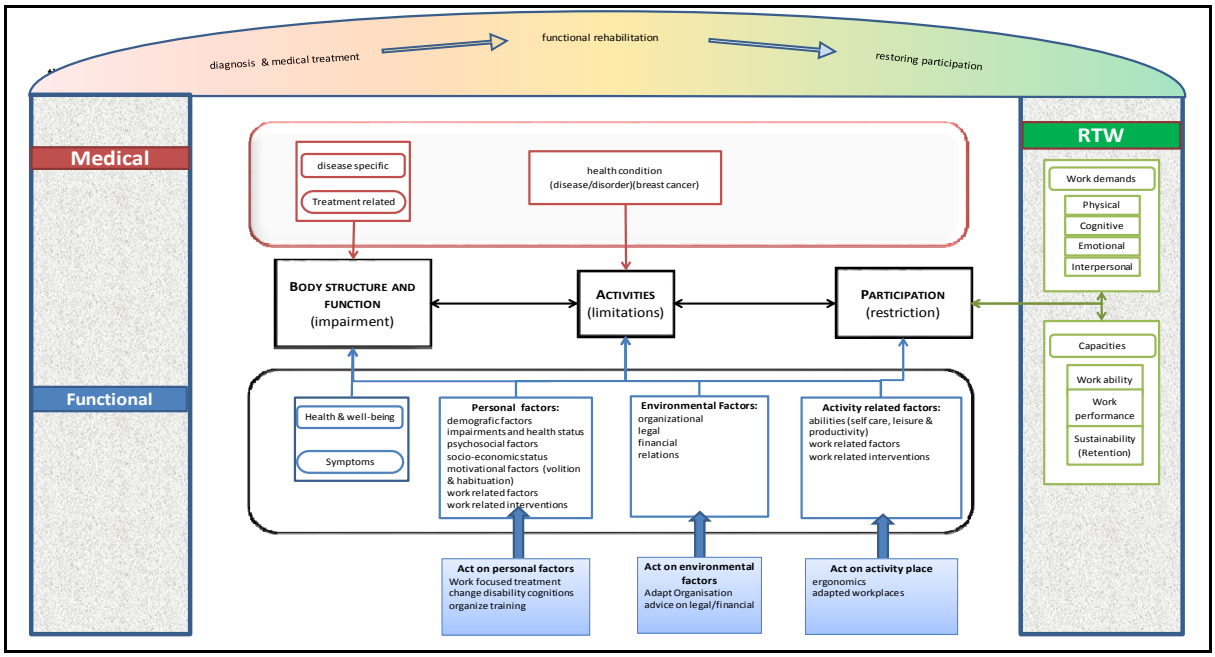
In this PhD project, the ICF model was selected as overarching frame of reference (chapter 1). As indicated by Tiedtke et al, the ICF model has at least three merits regarding research and practice RTW in BC patients: *"1) the assumption that the diagnosis does not entirely determine the degree of participation; 2) the emphasis on the role of context in the relationship between diagnosis and degree of participation; and 3) the emphasis on the role of personal characteristics in the relationships between diagnosis, degree of participation and personal characteristics*" [60] (page 157). The ICF model, which is in fact a concretization of the biopsychosocial model, bases its assessments on deviations from the 'norm'. However, the ICF is criticized for the lack of explicitly stated theoretical underpinning, questioning the ICF's intention to be client centred and socially inclusive might be questioned [86;87]. This shortcoming may limit its translation to RTW research and practice [87]. In this PhD project, chapter 2 and 3 referred to the necessity to highlight (labour)participation as essential element in patients' QoL and to the applicability of the ICF model for that purpose. With facilitating communication as one of the main goals of the conception of the ICF [88], the model corresponds to the emphasis on facilitating communication between stakeholders in the RTW-process that emerged from the research of this PhD project.

With "participation" as a large concept (including work/study, social life, running a household, relations with family and kin, leisure, transport, and shopping), the measurement of labour participation is somehow problematic [88;89]. In this PhD, we therefore used the ICF as overall theoretical framework but we elaborated on a more practical based OT model to enable the development of the OTI (chapter 4). However, no ICF based OT model for BC survivors was found, but the MOHO appeared to be a good basis. Chapter 4 presents the "organisation model for OT guided RTW intervention for BC patients" that was developed on the basis of the ICF, the MOHO and the models by Feuerstein and Verbeek and Spelten [90;91]. When the findings of the study in chapter 5 are included, an adapted version of the model can serve as a basis for an OTI intervention in BC patients (figure 3). In this model, the dynamic character of the stakeholders' pathway to "bridge the gap" between health care and the work place is emphasized [5;92-97].

With our " *organisation model for OT guided RTW intervention for BC patients*", the development of the OTI required additional background on theory that could be used to ground the specific actions of

the OT when embedded in the MDT, following the BC patient's pathway trough survivorship. The theoretical models that were inspirational for our research will be discussed next.

Figure 3: "organisation model for OT guided RTW intervention for BC patients": Adapted representation [72]



The shortage in explicit theoretical underpinning for RTW that Wasiak et al comment on regarding the ICF, finds response in different Vocational Rehabilitation (VR) models available in literature. VR is by definition a multidisciplinary intervention in a process linked to the facilitation of return to work or to the prevention of loss of the work [98]. VR emphasizes the need for medical support, rehabilitation and biopsychosocial approach to enable individuals to successfully participate in the workforce, which is the core of this PhD project [99]. The conceptual definition for VR that Escorpizo et al present, is based on the ICF and refers to a multi-professional approach that is provided to individuals of working age with health-related impairments, limitations, or restrictions with work functioning and whose primary aim is to optimize work participation [93]. As these elements are important for the development of the OTI in this PhD Project, VR models such as the Sherbrooke model and the Individual Placement and support model (IPS) will be discussed further.

In Belgium VR is not structurally available for patients in current hospital based treatment and only occasionally in rehabilitation centres. The Belgian ratification of the "Vocational Rehabilitation and Employment (Disabled Persons) Convention" might initiate enhancement of access of (BC) survivors with work-disability problems to VR services [100]. In the OTI this thesis aimed to develop, VR is inspirational on the elements that need to be taken into account (e.g.; holistic approach, focus on participation, individual biopsychosocial support provided by MDT). Then again, the need of BC to have access to support as early as possible in their survivorship and the delay VR presents (starting of only after acute health care services are finished) hinder a full implementation of VR in the OTI.

One of the leading VR models is the Sherbrooke model, which also is an ICF based biopsychosocial model. In comparison to conventional care in facilitating RTW after low-back-pain disability, the Sherbrooke model has proven to be more effective by combining medical treatment and ergonomic interventions on the workplace [101-103]. In this model the RTW-process is considered to be an interaction between biological, psychological and social conditions that determine the working capacity of an individual. The Sherbrooke model strives to explain the RTW process in a systematic context that takes into account the social environment, culture and policy (macro level), the work environment, health care, legal framework and insurance system (meso level), and the individual (micro level). In this model, the first component is not a medical but a participatory ergonomic intervention in the workplace to facilitate work accommodation and the RTW of the worker with low-back pain. In the OTI this PhD project aimed to develop, this ergonomic intervention is one of the key elements to enable success in the RTW process (chapter 2 and 3). The model's second component that contains a "therapeutic" approach with a progressive and adapted RTW under the supervision of a facilitator (ergonomist or occupational therapist), is to be implemented only if necessary after 12 weeks of work absence [93;102-104]. With the 12 weeks the model dedicates to care prior to launching of the second component, the specific needs of BC patients are not fully met. The 12 weeks delay might not be in line with the early start we detected as an essential element in the RTW-process (chapter 3). Our OTI also combines treatment of the medical condition and with the support of behavioural and workplace changes but apart from the starting point of the intervention, differences in patients' complaints (pain related complaints versus BC) hinder the full implementation of the Sherbrooke model in the OTI.

Another VR model with increasing importance in research and clinical practice is the Individual Placement and Support (IPS) model of Supported Employment. This model is an evidence-based VR model that is based on the biopsychosocial model developed for and largely studied among people with mental health problems that need support in order to re-entry the labour market [105-107]. Goldner found that in comparison to other vocational services, patients with severely disabling mental health issues received more benefit from supported employment initiatives but that these initiatives showed variable job tenure and low implementation by governments [108]. Being a specific approach within the supported employment services, IPS programs are based on important principles, e.g., working with patients' preferences, quick job searching, focusing on competitive employment and integration of employment counsellors in mental health teams [105]. The main focus of the IPS model is to help interested clients to return to community-based, competitive, integrated employment with time-unlimited follow-along support [109-111]. This aligns with our findings in Chapter 2 and 3 that highlighted the need to take patients' preferences into account in the OTI this PhD project aimed to develop. IPS concretises additional support regarding RTW by the presence of "employment counsellors" by which RTW coordination of the RTW process is mentioned.

As occupational therapists are able to coordinate the RTW process, the IPS approach was inspirational to our research [112;113]. The model emphasises on the integration of employment support within

clinical treatment, a personalised/strength-based approach, rapid job search, a focus on competitive employment, and minimal pre-vocational input which aligns with our findings regarding good practices (see Research Question 1 in this chapter) [111]. Other parts of the IPS are specifically tailored to the needs of people with mental health issues who are mostly out of job and thereby differ from the patient population of employed BC patients this PhD project focused on. This hindered the implementation of the IPS model as such in the development of the OTI.

However, by the end of our study in 2016, we found that Stapelfeldt et al. are using their earlier field experience with IPS in mental health patients to set up a RTW coaching trajectory for BC patients in Denmark [114]. The results of their study on the potential of the model for use in BC patients are expected end 2017. In the RTW-intervention Stapelfeldt et al, IPS inspired the way the job consultants that provide the interventions, systematize the actions by which they support RTW [114].

Apart from health-care based VR models (such as Sherbrooke and IPS), also workplace-based initiatives pay attention to RTW. Disability Management (DM) is an ICF-based approach, designed as a workplace prevention and remediation strategy that seeks to prevent work disability by occupational health services, often in collaboration with human resource services [108;115-117]. With the employer as one of the main stakeholders in a RTW process, the workplace-focused approach of DM was taken into account in this PhD project (chapter 1 to 4). The DM model describes a two-sided approach: 1) providing a Disability Manager (DM) who supervises the implementation of the policy in the company, and 2) making use of a Disability Case Manager (DCM) who is directly involved with the individual workers and who uses case-management techniques to collaborate with the worker and other stakeholders to solve the work-related problems. The DCM thereby supports both maintaining person in the workplace or assists in resuming work [117;118]. In comparison to the results of chapter 3, the experts' refer to the role of a DCM when claiming support for RTW for their BC patients. The DM approach supports the suggestion of the experts in chapter 3 to assign the role of DCM to occupational therapists regarding RTW of BC patients [119].

In Belgium, governments and stakeholders from social insurance and health-and wellbeing at work, as well as other stakeholders on the employers' side are strongly interested and – ate date - exploring the potential of this model to facilitate (re-) entrance of BC patients during/after treatment [120;121]. In Belgium DM is recently been implemented by efforts of the National Institute for Health and Disability Insurance (NIHDI) by educating health care professional of different disciplines (including OT) following the NIDMAR concept thereby connecting health care based efforts (such as application of VR) to workplace based efforts. Our results align with this approach by the NIHDI, based both on the findings in chapter 3 and results of additional literature that clearly indicates the importance of active involvement of all stakeholders of the RTW process [5;16;20;26;119;122-127]. Therefore, the OTI this PhD project focussed at, takes the stepwise approach of DM and the description of the Case management process into account. Our research clearly revealed that an early start of RTW support is essential for BC patients; consequently integrating RTW support in the medical treatment appears to be evident

(chapter 1 and 3). Starting a RTW support from the workplace is not only limited by restrictions of patients in wanting to reveal their disease towards their employer but also rules and regulations in behalf of privacy issues can be influential. In Belgium employees are not obliged to inform their employer on the cause of their sick leave and employers are prohibited to collect such information of their employees [128]. Due to the prominence of cancer as a taboo, many employees will be reluctant to spontaneously revealing their health status, which limits even open minded employers to provide cancer specific RTW support [21;26;30;31;45;129]. The focus DM puts on employers' issues (e.g.; prevention of absenteeism) is of lesser importance to this OTI and the target group of this model (all employees in sick leave) might thereby restrain a cancer-specific approach.

Starting from patients' and other primary stakeholders needs and aiming to combine those in a useful roadmap for the OTI, none of the abovementioned models were used "as such" due to the lack of clear indication of the patients' perspective as starting point of the models. Common in the theories and models presented in this paragraph is that they focus on supporting RTW by providing an approach that is designed to be offered by health care professionals, aiming to be put into practice in the workplace for which specific workplace based support can be activated. By explaining how changes in behaviour of the stakeholders (patient, health care providers and employers) can be understood, these theories and methods are inspirational for the development of the OTI. However, the currently lacking "bridge" between health care and the BC patients' workplace needs additional research.

2.2 Intervention mapping as tool for developing the OTI

International literature reveals that Intervention Mapping (IM) provided an approach that matched with the starting point for the development of this RTW intervention [130-135]. Although IM was initially developed for health promotion programs, the approach proved to be useful in designing RTW-intervention in various patient populations [130-136]. To set up individual therapeutic trajectories in assisting patients in solving RTW problems OT uses: needs identification, context clarification, goal setting, planning of practical implementation, stepwise realisation of planning, evaluation and adjustment of goals, planning and realisation [75;137]. As this closely corresponds to the IM approach, we overcome an important barrier for health care professionals (e.g., occupational therapists) to implement RTW-focused issues in their clinical practice [13;24;46;138-141].

A comparison with other IM-based development processes of RTW-interventions for BC patients is limited due to the low number of publications that mention the use of IM, even though the experiences among researchers, who did make use of IM, are very positive on behalf of the development process and results [13;39;130-136;142]. This thesis focused on the first 4 steps in the IM approach because the aim was to develop an intervention. Realising the intervention (IM step 5) and evaluation (IM step 6) are not presented in this thesis. These two steps are part of the ongoing research.

2.3 Methodological considerations Research Question 2

As mentioned above, the large concept of "participation" of ICF is insufficiently specific for this PhD research with a focus on return to paid employment for female BC patients. Even though OT literature does provide models that include "work" and "return to work" (chapter 4), there is no OT model that specifically focuses on providing theoretical foundation for OT support for RTW for female BC patients in paid work.

To develop the model that was lacking for our research, we adapted the MOHO to fit the BC patients' needs and combined this with results on RTW models that make no reference to roles taking by specific health care professionals. By adapting the MOHO for a BC focused application, we are aware that the standardisation of the use of the MOHO in our research was weakened. Then again, strength of the use of the inductive process is that this contributes to the – ate date – lacking theoretical basis for the OT-guided RTW intervention for BC patients. The reasoning we used in this research is in line with the evidence-based philosophy of Arbesman, requiring the integration of information from three sources: i) clinical experience and reasoning (chapter 2 and 3), ii) preferences of clients and their families (chapter 1 and 3), and iii) findings from the best available research (chapter 1 till 5) [143].

This approach links to the stepwise protocol of IM that starts with assessment of the needs for the intervention, followed by an iterative process that forces the researcher to move back and forth between the steps. By doing so, this protocol connect theory and research findings thoroughly to the practice, in order to safeguard implementation in the patients' realities [134;136;144-147]. The necessity to construct a theoretical basis that can take this dynamic evolving reality of context, patient and workplace into account is highlighted by the findings of Tiedtke on the changes between the three detected BC patient experiences [25;27;60].

Respecting patients' needs and reality during survivorship together with all other stakeholders' concerns, the OTI should be implementable in clinical health care practice (chapter 1 and 3). Therefore it must be possible to make clear which member of the MDT can be designated to take that the role of RTW coordinator. In this PhD project, we assumed occupational therapists are capable of taking that role without valuing the potential of other disciplines in the MDT. In further research this weakness in our research should be responded by investigating more in detail on the added value of OT, on the roles of other team members regarding RTW support for BC patients, and on best practice in collaboration of the multidisciplinary team members when RTW is the goal of the team-effort.

Not only the involvement of the different members of the MDT and the BC patient, also of the multitude of stakeholders who are part of the other systems (work place system and legislative- and insurance system), might restrain the impact that behaviour of one individual (the BC patient) can have on the complexity of this individual's reality [102-104]. The importance of the influences of the multiple stakeholders was supported by the findings in our research (chapters 2, 3 and 5). The strength of these findings is somehow limited by the weakness that no exhaustive list of all stakeholders and their role in

the RTW process could be presented since this would help describing more in detail each stakeholder's role and thereby enhance collaboration.

The enormous amount of information that was available as result of the work we did for chapter 5 might have increased the risk of bias ('cherry picking'). This could have had a negative influence on the final result of our understanding of the information and on the issues we incorporated in our RTW intervention. On the other hand, we developed a very comprehensive intervention to counterbalance this. Nevertheless, this comprehensiveness might lead to lower feasibility in practice. Evaluation of the intervention will give an answer to these questions.

The intervention that results from this thesis focuses on the contribution of OT regarding the patient's situation. This focus leaves the potential contribution that occupational therapists might deliver to the integrated approach of the MDT unattended. Even with referral to the multidisciplinary collaboration currently already present for many aspects in QoL (e.g., total recovery, wellness, wellbeing, social relations) for BC patients, this thesis focused on a specific aspect of health care service, without elaborating the role of other health care providers in supporting RTW.

Our focus on the potential of OT in contributing to RTW in BC patients supports the importance of other members of the MDT and/or other stakeholders in the RTW process (e.g.; occupational health physician, human resource management, social security), as by definition, OTs are supporting multidisciplinary approaches [148-153]. Research on other professionals taking this role will show the extent to which this role is specific for OTs.

3 CONCLUSIONS

We found that in order to support BC patients in solving problems regarding RTW they encounter during survivorship, competencies of occupational therapists are useful to respond to BC patients' needs and to facilitate them to maintain or resume their labour participation. The results of international literature as well as research in the Belgian situation regarding RTW for BC patients presents fragmented information, with major differences in stakeholders and contexts involved.

Using this information to develop an optimal RTW intervention for BC patients proved to be far from evident. Developing a more "generic" model that relies on the existing frames of references and available evidence enables the existing gaps to be filled. By using IM we were able to identify and describe the elements that are essential for such a generic model that might be instrumental for specific RTW interventions.

As the different ways of reasoning that coincide with each other (IM and OT), the development of our RTW intervention is both evidence-based and embedded in practice-based evidence [77;154-158]. Research indicates the poor transition of (OT) evidence-based practice to "real life" (OT) practice-based evidence (and vice versa) [136-138]. The unique intervention we developed (chapter 5), is derived from the results of the included studies (chapter 2- 4) and enables the occupational therapist to bridge between

individual BC patient needs, the input of stakeholders at the hospital and those at the workplace. As mentioned above, screening for the need for support or the wish of the patient to be self-supportive is not included in the RTW intervention as this precedes the patients' decision to apply for support by caregivers.

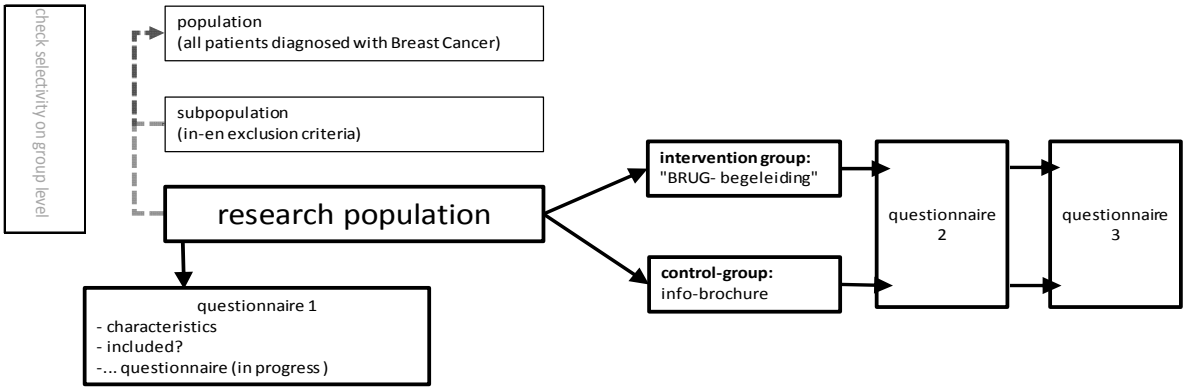
4 RECOMMENDATIONS FOR FURTHER RESEARCH

This study is the foundation of a research project that aims to i) develop, ii) implement and iii) evaluate an OT guided RTW intervention for BC patients in Belgium. The results of our study convey questions that induce further examination. In our study, we determined the elements to be taken into account in an RTW intervention for BC patients. The next step is the development of an intervention manual or 'road book'. This manual for the RTW intervention should assist defining the stakeholders involved in each phase of that process and indicating tools that can be used to guide and administer the process are to be included. Subsequently, the intervention needs to be evaluated regarding feasibility and expected effects.

When this OTI for RTW for BC patients will be fully developed, an effectiveness study including cost –effectiveness could be done.

With a grant of the Flemish organisation 'Kom Op Tegen Kanker', we are able to realise some of the abovementioned recommendations for further research. Defining the content and stepwise description of an OT guided RTW intervention for BC in Belgium started at 01/02/2016 with collaboration between the Jessa Ziekenhuis in Hasselt, UZ Leuven, Universiteit Maastricht and Vrije Universiteit Brussel and Katholieke Universiteit Leuven. The research setting for the process- and feasibility study of the intervention is a mimic RCT (intervention group and control group planned to have each 50 participants).

Figure 4: Research Design process- and feasibility study OTI for RTW support for BC patients



The target group of the intervention are female BC patients at working age, who are employed in private or public employment contracts (full-time or part time). Outcome measures will be set on patient-level (perceived QoL, number of days in sick-leave /fulltime & part time; relapse) and on providers level (days of duration of the RTW guided process and time-use of the OT & multidisciplinary team (MDT)). The road-book of the intervention is written in collaboration with the participating MDT, has been tested

and is now been tested in a process- and feasibility study. Results of a subsequently feasibility study and process evaluation will be available end 2017.

Other opportunities that also would reduce work-disability in BC patients by promoting RTW (e.g., decreasing administrative and medical treatment costs) are not taken into account in this study as they cannot be influenced by a client-centred RTW intervention, set to be realised on individual level. Further research could, however, go into cost-effectiveness of the RTW intervention and study the way in which the presumed effects of the intervention can be observed, and how this affects costs of treatment, care and social welfare expenditures [159].

We found that concepts (e.g., work, working life, work resumption, RTW) are sometimes poorly described and also differ between research settings, leaving it unclear what exactly the content of such workplace oriented actions should be. Hence, future research should include clear description. Outcomes need to be defined regarding efforts necessary for reach RTW goals, how to define sickness absence, on presentism, on societal perspectives, and cost and cost-effectiveness [159]. This also might be useful for research on potential for generalisation of our RTW intervention for use in other (male and female) cancer patients.

5 REFERENCE LIST

(1) Lambeek LC, van Mechelen W, Knol DL, Loisel P, Anema JR. Randomised controlled trial of integrated care to reduce disability from chronic low back pain in working and private life. BMJ 2010;2010(340:c1035).

(2) Schene AH, Koeter MWJ, Kikkert MJ, Swinkels JA, McCorne P. Adjuvant occupational therapy for work-related major depression works: randomized trial including economic evaluation. Psychol Med 2006 Nov 20;37:351-62.

(3) Désiron HAM, Knippenberg E, Willems B, Neerinckx E. Occupational therapy for breast cancer survivors: improving quality of life by return-to-work assistance. Journal of Rehabilitation Medicine 2008 Jun;135-6.

(4) Franche R. Workplace-based return-to-work interventions: a systematic review of the quantitative literature. Journal of Occupational Rehabilitation 2005 Dec 15;15(4):607-31.

(5) Park J, Shubair M. Returning to Work After Breast Cancer: A Critical Review. International Journal of Disability Management Research 2013;8:10.

(6) Post RB. Return to work and quality of life in severely injured patients. Disability & Rehabilitation 2006 Nov 30;28(22):1399-404.

(7) de Vries G, Schene A. Arbeidshulpverlening bij depressie. 875 ed. Psychiatrie AMC / De Meren; 2003.

(8) Lambeek LC, Anema JR, Van Royen BJ, Buijs PC, Wuisman PI, Tulder MW, et al. Integrated care, produced for use in integrated health care for patients with chronic low back pain. BMJ 2010 Mar 5;1-38.

(9) Morrison TL, Thomas RL. Survivors' experiences of return to work following cancer: A photovoice study: Expériences vécues par des survivantes á un cancer face á leur retour au travail : Une étude photovoice. Canadian Journal of Occupational Therapy 2014 Jun 1;81(3):163-72.

(10) Paquette S. Research Trends in Work Disability Prevention. Work and Industry Special Interest Section Quarterly / American Occupational Therapy Association 2015 Jun;29(2):1-4.

(11) Wright M. Early return to work & occupational therapy. OT practice 1997 May 2;2(5):36-42.

(12) Shaw W, Hong QN, Pransky G, Loisel P. A Literature Review Describing the Role of Return-to-Work Coordinators in Trial Programs and Interventions Designed to Prevent Workplace Disability. J Occup Rehabil 2008;18(1):2-15.

(13) Stergiou-Kita M, Grigorovich A, Tseung V, Milosevic E, Hebert D, Phan S, et al. Qualitative meta-synthesis of survivors' work experiences and the development of strategies to facilitate return to work. J Cancer Surviv 2014;8(4):657-70.

(14) National Institute of Disability Management and Research (NIDMAR). Policies and procedures "certified disability management professional". NIDMAR; 2015.

(15) Knott V, Zrim S, Shanahan EM, Anastassiadis P, Lawn S, Kichenadasse G, et al. Returning to work following curative chemotherapy: a qualitative study of return to work barriers and preferences for intervention. support care cancer 2014;22(12):3263-73.

(16) Bains M, Yarker J, Amir Z, Wynn P, Munir F. Helping cancer survivors return to work: what providers tell us about the challenges in assisting cancer patients with work questions. Journal of Occupational Rehabilitation 2011;22(1):71-7.

(17) Fantoni SQ, Peugniez C, Duhamel A, Skrzypczak J, Frimat P, Leroyer A. Factors related to return to work by women with breast cancer in northern France. J Occup Rehabil 2009;20.

(18) Groeneveld IF, de Boer AGM, Frings-Dresen MHW. Physical exercise and return to work: cancer survivors' experiences. Journal of Cancer Survivorship 2013;7(2):237-46.

(19) Lewis J, Chapparo C, Mackenzie L, Ranka J. Work after breast cancer: Identification of cognitive difficulties using the Perceive, Recall, Plan, and Perform (PRPP) System of Task Analysis. british journal of occupational therapy 2016 May 1;79(5):323-32.

(20) Stergiou-Kita M, Pritlove C, Holness DL, Kirsh B, Eerd D, Duncan A, et al. Am I ready to return to work? Assisting cancer survivors to determine work readiness. Journal of Cancer Survivorship 2016;1-12.

(21) Stergiou-Kita M, Pritlove C, van Eerd D, Holness LD, Kirsh B, Duncan A, et al. The provision of workplace accommodations following cancer: survivor, provider, and employer perspectives. Journal of Cancer Survivorship 2016;10(3):489-504.
(22) Tamminga SJ, de Boer AGEM, Bos MMEM, Kitzen JJEM, Plaisier PW, Verbeek JHAM, et al. A hospital-based work support intervention to enhance the return to work of cancer patients: a process evaluation. Journal Occupational rehabilitation 2012;22(4):565-78.
(23) Tamminga SJ, Verbeek JHAM, Bos MMEM, Fons G, Kitzen JJEM, Plaisier PW, et al. Effectiveness of a Hospital-Based Work Support Intervention for Female Cancer Patients - A Multi-Centre Randomised Controlled Trial. PloS one 2013 May 22;8(5):63271.
(24) Aaronson NK, Mattioli V, Minton O, Weis J, Johansen C, Dalton SO, et al. Beyond treatment - Psychosocial and behavioural issues in cancer survivorship research and practice. EJC Supplements 2014 May 29;12(1):54-64.
(25) Tiedtke C, Dierckx de Casterlé B, de Rijk A, Christiaens MR, Donceel P. Breast cancer treatment and work disability: patient perspectives. Breast 2011;20(6):534-8.
(26) Tiedtke C, Donelly M, de Rijk A, Dierckx de CB. Return to work following breast cancer treatment: the employers' side. Journal of Occupational Rehabilitation 2014;24(3):399-409.
(27) Tiedtke C, Dierckx de CB, Donelly M, de Rijk A. Workplace support after breast cancer treatment: recognition of vulnerability. Disabil Rehabil, 2015;37(19):1770-6.
(28) Salonen P, Kellokumpu-Lehtinen PL, Tarkka MT, Koivisto AM, Kaunonen M. Changes in quality of life in patients with breast cancer. Journal of Clinical Nursing 2011 Jan 1;20(1-2):255-66.
(29) Clark JC, Landis LL. Reintegration and maintenance of employees with breast cancer in the workplace. AAOHN J 1989 May;37(5):186-93.
(30) Grunfeld EA, Low E, Cooper AF. Cancer survivors' and employers' perceptions of working following cancer treatment. Occupational Medicine 2010 Dec 1;60(8):611-7.
(31) Nilsson M, Olsson M, Wennman-Larsen A, Petersson LM, Alexanderson K. Return to work after breast cancer: Womens experiences of encounters with different stakeholders. european journal of oncology nursing 2011 Jul;15(3):267-74.
(32) Tiedtke C, Knops L, Désiron H, Dierckx de Casterlé B, Donceel P, de Rijk A. Supporting Return-to-work in the face of legislation: Stakeholders' Experiences with Return-to-Work after Breast Cancer in Belgium. Journal of Occupational Rehabilitation 2011;22(2):241-51.
(33) Pauwels E. Needs for information and support of breast cancer survivors and intimate partners during the transition into survivorship Ghent University, Social Health Science / Free Universtity of Brussels, Psychological Science; 2012.
(34) Pauwels EEJ, Charlier C, De Bourdeauhuij I, Lechner L, Van Hoof E. Care needs after primary breast cancer treatment. Survivors' associated sociodemographic and medical characteristics. psycho-oncology 2011 Aug 17;22(1):125-32.
(35) Tamminga SJ. Breast cancer survivors' views of factors that influence the return-to-work process--a qualitative study. Scand J Work Environ Health 2012;38(2):144-54.
(36) Taskila T, Lindbohm ML, Lehto US, Hakanen J, Hietanen P. Cancer survivors' received and needed social support from their work place and the occupational health services. support care cancer 2006 Jan 10;14(5):427-35.
(37) Tiedtke C. Survived but feeling vulnerable and insecure: a qualitative study of the mental preparation for RTW after breast cancer treatment. BMC Public Health 2012;12:538.
(38) de Boer AGEM, Taskila TK, Tamminga SJ, Feuerstein M, Frings-Dresen MHW, Verbeek JH. Interventions to enhance return-to-work for cancer patients. Cochrane Database of Systematic Reviews 2015;2015(9):1-76.
(39) Vooijs M, Leensen MCJ, Hoving JL, Wind H, Frings-Dresen MHW. Interventions to enhance work participation of workers with a chronic disease: a systematic review of reviews. Occupational and environmental medicine 2015 Nov 1;72(11):820-6.
(40) van Vilsteren M, van Oostrom SH, de Vet HC, Franche RL, Boot CR, Anema JR. Workplace interventions to prevent work disability in workers on sick leave. Cochrane Database of Systematic Reviews 2015;2015(10): Art. No.: CD006955.
(41) Raque-Bogdan TL, Hoffman TLM, Ginter AC, PIontkwski S, Schexnayder K, White R. The Work Life and Career Development of Young Breast Cancer Survivors. Journal of Counseling Psychology 2015;62(4):655-69.

(42) Tiedtke C, de Rijk A, Dierckx dC, Christiaens MR, Donceel P. Experiences and concerns about 'returning to work' for women breast cancer survivors: a literature review. psycho-oncology 2009 Oct 12;2010(19):677-83.
(43) Partridge AH, Rosenberg SM, Rajagopal PS, Ruddy KJ, Tamimi RM, Schapira L, et al. Employment trends in young women following a breast cancer diagnosis. 2015 Dec 11; 2015.
(44) Friesen MN. Return-to-work: the importance of human interactions and organizational structures. work 2001;17(1):11-22.
(45) Islam T, Dahlui M, Majid H, Nahar A, Mohd Taib N, Su T, et al. Factors associated with return to work of breast cancer survivors: a systematic review. BMC Public Health 2014;14(Suppl 3):S8.
(46) Isernhagen SJ. Job matching and return to work: Occupational rehabilitation as the link. work 2006;26(3):237-42.
(47) Baker FJT, Boguslaw B, Corin H, van Delft J, van Dorpe F, Ekeberg C, et al. The Role of the Occupational Health Nurse in Workplace Health Management. Copenhagen: WHO Regional Office for Europe; 2001.
(48) Boyes A, Girgis A, Lecathelinais C. Brief assessment of adult cancer patients' perceived needs: development and validation of the 34-item Supportive Care Needs Survey (SCNS-SF34). J Eval Clin Pract 2009;15.
(49) Girgis A, Boyes A, Sanson-Fisher RW, Burrow S. Perceived needs of women diagnosed with breast cancer: rural versus urban location. Aust N Z J Public Health 2000;24.
(50) Pagani O. Survivorship - What Women Need After Breast Cancer. 2014 p. S43-S44.
(51) Shewbridge A, Wisemann T, R, hardson JL. Working while receiving chemotherapy: a survey of patients' experiences and factors that influence these. Eur J Cancer Care (Engl) 2012 Jan 1;21(1):117-23.
(52) Mackenzie CR. It is hard for mums to put themselves first: How mothers diagnosed with breast cancer manage the sociological boundaries between paid work, family and caring for the self. Social Science & medicine 2014 Sep;117:96-106.
(53) Tiedtke C, de Rijk A, Donceel P, Christiaens MR, Dierckx de Casterlé B. Survived but feeling vulnerable and insecure: a qualitative study of the mental preparation for RTW after breast cancer treatment. BMC Public Health 2012 Jul 23;2012(12):538.
(54) Johnsson A. Factors associated with return to work after breast cancer treatment. Acta Oncol 2007;46(1):90-6.
(55) Lilliehorn S, Hamberg K, Kero A, Salander P. Meaning of work and the returning process after breast cancer: a longitudinal study of 56 women. Scandinavian Journal of Caring Sciences 2013 Jun 1;27(2):267-74.
(56) Lundh MH. Health-related Quality of life and Return to work following breast cancer. Upsala: Uppsala University, Disciplinary Domain of Medicine and Pharmacy, Faculty of Medicine, Department of Public Health and Caring Sciences. Regional Cancer Centre, Uppsala University Hospital.; 2014.
(57) Nilsson MI, Olsson M, Wennman-Larsen A, Petersson LM, Alexanderson K. Women's reflections and actions regarding working after breast cancer surgery: a focus group study. psycho-oncology 2013 Jul 1;22(7):1639-44.
(58) Peugniez C, Fantoni S, Leroyer A, Skrzypczak J, Duprey M, Bonneterre J. Return to work after treatment for breast cancer: single center experience in a cohort of 273 patients. Bull Cancer 2011;98.
(59) Roelen CA, Koopmans PC, van Rhenen W, Groothoff JW, van der Klink JJ, Bültmann U. Trends in return to work of breast cancer survivors. Breast Cancer Res Treat 2011;128.
(60) Tiedtke C. Return to work experiences after breast cancer. Leuven: Leuven University Group Biomedical Sciences; Faculty of Medicine -Department of Public Health and Primary Care, Occupational, Environmental and Insurance Medicine; 2013.
(61) Hegel MT, Lyons KD, Hull JG, Kaufman P, Urquhart L, Li Z, et al. Feasibility study of a randomized controlled trial of a telephone-delivered problem-solving-occupational therapy intervention to reduce participation restrictions in rural breast cancer survivors undergoing chemotherapy. psycho-oncology 2010 Sep 5;2011(20):1092-101.

(62) Nieuwenhuijsen K. Enhanced provider communication and patient education regarding return to work in cancer survivors following curative treatment: a pilot study. Journal of Occupational Rehabilitation 2006 Dec 16;16(4):647-57.
(63) Silver JK, Gilchrist LS. Cancer Rehabilitation with a Focus on Evidence-Based Outpatient Physical and Occupational Therapy Interventions. American Journal of Physical Medicine & Rehabilitation 2011;90(5):S5-S15.
(64) Vockins H. Occupational Therapy intervention with patients with breast cancer: a survey. Eur J Cancer Care (Engl) 2004;2004(13):45-52.
(65) Lippens N. Beïnvloedende factoren voor professionele reïntegratie na borstkanker Master in de Geneeskunde, Rijks Universiteit Gent; 2014.
(66) Cooper AF, Hankins M, Rixon L, Eaton E, Grunfelf EA. Distinct work-related, clinical and psychological factors predict return to work following treatment in four different cancer types. psycho-oncology 2013;22(3):659-67.
(67) Feuerstein M. Recommendations for the U.S. National Occupational Research Agenda: research on cancer survivorship and musculoskeletal disorders and work disability. J Occup Rehabil 2006;16(1):1-5.
(68) Grunfeld EA. The organisational perspective on the return to work of employees following treatment for cancer. Journal of Occupational Rehabilitation 2008 Dec 18;18(4):381-8.
(69) Pryce J. Cancer survivorship and work: symptoms, supervisor response, co-worker disclosure and work adjustment. Journal of Occupational Rehabilitation 2007 Mar 17;17(1):83-92.
(70) Yarker J, Munir F, Bains M, Kalawsky K, Haslam C. The role of communication and support in return to work following cancer-related absence. psycho-oncology 2010 Oct 1;19(10):1078-85.
(71) Désiron HAM, de Rijk A, Van Hoof E, Donceel P. Occupational therapy and return to work: a systematic literature review. BMC Public Health 2011;2011(11):615.
(72) Désiron HAM, Donceel P, de Rijk A, Van Hoof E. A Conceptual-Practice Model for Occupational Therapy to Facilitate Return to Work in BC patients. Journal of Occupational Rehabilitation 2013 Feb 20;23(4):516-26.
(73) Désiron HAM, Donceel P, Godderis L, Van Hoof E, de Rijk A. What is the value of occupational therapy in return to work for breast cancer patients? A qualitative inquiry among experts. Eur J Cancer Care (Engl) 2014 Jun 24;24(2):267-80.
(74) Désiron HAM, Crutzen R, Godderis L, Hoof E, Rijk A. Bridging Health Care and the Workplace: Formulation of a Return-to-Work Intervention for Breast Cancer Patients Using an Intervention Mapping Approach. Journal of Occupational Rehabilitation 2016;1-16.
(75) Duncan EAS. Skills for practice in occupational therapy. Edinburgh: Churchill Livingstone Elsevier; 2009.
(76) Meriano C, Latella D. Occupational Therapy Interventions Function and Occupations. Thorofare: SLACK Incorporated; 2008.
(77) Tomlin G, Borgetto B. Research Pyramid: A New Evidence-Based Practice Model for Occupational Therapy. The American Journal of Occupational Therapy 2011 Mar;65(2):189-96.
(78) Désiron H, Knippenberg E, Willems B. Arbeidsre-integratie ten behoeve van arbeidsparticipatie en ervaren levenskwaliteit bij oncologische revalidanten (PWO project nr 2/dwo/Re05PO15). Hasselt: Provinciale Hogeschool Limburg, (D.O.P.); 2008 Aug 5.
(79) Désiron HAM, Willems B, Op't Eijnde B, Claes G. Arbeidsparticipatie van ex-kankerpatiënten: verkennende literatuurstudie over de inbreng van ergotherapie bij ondersteuning van herstel van (arbeids)participatie voor ex-kankerpatiënten. acta ergotherapeutica Belgica 2009;3:26-35.
(80) Désiron HAM, Biesmans K, Reyskens A. Ergotherapeutische Methodiek in Oncologische Revalidatie (EMIOR) / (Occupational Therapy approach for (labour-)re-Integration in Oncology Rehabilitation). http://esf-agentschap.be/nl/projectenkaart/emior-ii; 2012. Report No.: ESF project nr 2144.
(81) Casso D, Buist SMD, Taplin S. Quality of life of 5-10 year cancer survivors diagnosed between age 40 and 49. Health Qual Life Outcomes 2004 May 18;2(25).
(82) Cimprich B, Ronis DL, Martinez-Ramos G. Age at diagnosis and quality of life in breast cancer survivors. American Cancer Society 2002 Apr 1;10(85):93.

(83) Costantini M, Mencaglia E, Cortesi E, Roila F, Ballatori E, Tamburini M, et al. Cancer patients as experts in defining quality of life domains. a multicentre survey by the italian group for the evaluation of outcomes in oncology. Quality of life research 2000;2000(9):151-9.
(84) EORTC. Quality of life. http://groups eortc be/qol 2015 [cited 2015 Nov 23];Available from: URL: http://groups.eortc.be/qol/quality-life
(85) Mols F, Vingerhoets AJJM, Coebergh JW, van de Poll-Franse LV. Quality of life among breast cancer survivors: a systematic review. Eur J Cancer 2005 Oct 13;2005(41):2613-9.
(86) Addy L. Occupational therapy evidence in practice for physical rehabilitation. Oxford: Blackwell Publishing Ltd; 2006.
(87) Wasiak R, Young AE, Roessler RT, McPherson KM, van Poppel MN, Anema JR. Measuring return to work. Journal of Occupational Rehabilitation 2007;17:766-81.
(88) Harty M, Griesel M, van der Merwe A. The ICF as a common language for rehabilitation goal-setting: comparing client and professional priorities. Health Qual Life Outcomes 2011 Oct 7;9:87.
(89) Eldh AC, Ekman I, Ehnfors M. A Comparison of the Concept of Patient Participation and Patients' Descriptions as Related to Healthcare Definitions. International Journal of Nursing Terminologies and Classifications 2010;21(1):21-32.
(90) Feuerstein M, Todd BL, Moskowitz MC, Bruns GL, Stoler MR, Nassif T, et al. Work in cancer survivors: a model for practice and research. J Cancer Survivor 2010;(4):415-37.
(91) Verbeek J, Spelten E. Work. In: Feuerstein M, editor. Handbook of cancer survivorship.New-York: Springer; 2007.
(92) Wasiak R. Measuring return to work. Journal of Occupational Rehabilitation 2007 Dec 17;17(4):766-81.
(93) Escorpizo R, Reneman MF, Ekholm J, Fritz J, Krupa T, Marnetoft SU, et al. A Conceptual Definition of Vocational Rehabilitation Based on the ICF: Building a Shared Global Model. J Occup Rehabil 2011;21(2):126-33.
(94) Haglund L, Henriksson C. Concepts in occupational therapy in relation to the ICF. Occup Ther Int 2003;10(4):253-68.
(95) Leyshon RT, Shaw LE. Using the ICF as a conceptual framework to guide ergonomic intervention in occupational rehabilitation... International Classification of Functioning, Disability, and Health. work 2008 Mar 14;31(1):47-61.
(96) Steiner WA, Ryser L, Huber E, Uebelhart DAA, Stucki G. Use of the ICF Model as a clinical problem solving tool in physical therapy and rehabilitation medicine. Physical Therapy 2002 Nov;82(11):1098-107.
(97) World Health Organization. Towards a Common Language for Functioning, Disability and Health ICF. www who int 2002 [cited 2014 Aug 26];Available from: URL: http://www.who.int/classifications/icf/training/icfbeginnersguide.pdf
(98) Gobelet C. Vocational rehabilitation: a multidisciplinary intervention. Disabil Rehabil 2007;29(17):1405-10.
(99) Finger ME, Glässel A, Erhart P, Gradinger F, Klipstein A, Rivier G, et al. Identification of Relevant ICF Categories in Vocational Rehabilitation: A Cross Sectional Study Evaluating the Clinical Perspective. J Occup Rehabil 2011;21(2):156-66.
(100) International Labour Organisation (ILO). Belgium ratifies the Conventions on Vocational Rehabilitation and Employment (Disabled Persons) and Domestic Workers. http://www ilo org/global/standards/WCMS_375247/lang--en/index htm 2016 [cited 2015 Dec 25];Available from: URL: http://www.ilo.org/global/standards/WCMS_375247/lang--en/index.htm
(101) Escorpizo R, Reneman M, Ekholm J, Fritz J, Krupa T, Marnetoft SU, et al. A Conceptual Definition of Vocational Rehabilitation Based on the ICF: Building a Shared Global Model. J Occup Rehabil 2011;21(2):126-33.
(102) Fassier J-B, Durand MJ, Caillard JF, Roquelaure Y, Loisel P. Results of a feasibility study: barriers and facilitators in implementing the Sherbrooke model in France. Scandinavian Journal of Work, Environment & Health 2015;41(3):223-33.
(103) Loisel P. From evidence to community practice in work rehabilitation: the Quebec experience. Clin J Pain 2002;19(2):105-13.

(104) Loisel P, Durand P, Abenhaim L, Gosselin L, Simard R, Turcotte J, et al. Management of occupational back pain: the Sherbrooke model. Results of a pilot and feasibility study. Occupational and environmental medicine 1994 Sep 1;51(9):597-602.
(105) Knaeps J. Vocational Rehabilitation, People with mental health problems, Vocational Rehabilitation counselors, Mental Health practionoers KULeuven; 2015.
(106) Kinoshita Y, Furukawa TA, Kinoshita K, Honyashiki M, Omori IM, Marshall M, et al. Supported employment for adults with severe mental illness. Cochrane Database of Systematic Reviews 2013;(9).
(107) Bond GR, Becker DR, Drake RE, Rapp CA, Meisler N, Lehman AF, et al. Implementing Supported Employment as an Evidence-Based Practice. PS 2001 Mar 1;52(3):313-22.
(108) Goldner E. Disability management, return to work and treatment. Healthcare Papers 2004;5(2):76-90.
(109) Auerbach ES. The Individual Placement and Support Model vs. the Menu Approach to Supported Employment. Occupational Therapy in Mental Health 2002 Mar 21;17(2):1-19.
(110) Howard LM, Heslin M, Leese M, McCrone P, Rice C, Jarrett M, et al. Supported employment: randomised controlled trial. Br J Psychiatry 2010 May 7;196(5):404-11.
(111) Miller L, Clinton-Davis S, Meegan T. Journeys to work: the perspective of client and employment specialist of "Individual Placement and Support" in action. Mental Health Social Inclusion 2014;18(4):198.
(112) Schneider J, Akhtar A, Boycott N, Guo B, Latimer E, Cao Z, et al. Individual placement and support versus individual placement and support enhanced with work-focused cognitive behaviour therapy: Feasibility study for a randomised controlled trial. british journal of occupational therapy 2016 May 1;79(5):257-69.
(113) Priest B, Bones K. Occupational therapy and supported employment: is there any added value? Mental Health Social Inclusion 2012 Nov 23;16(4):194-200.
(114) Stapelfeldt CM, Labriola M, Jensen AB, Andersen NT, Momsen AM, Nielsen CV. Municipal return to work management in cancer survivors undergoing cancer treatment: a protocol on a controlled intervention study. BMC Public Health 2015 Jul 29;15:720.
(115) Burton WN. Disability management: corporate medical department management of employee health and productivity. J Occup Environ Med 2000;42(10):1006-12.
(116) Kalina CM. Strategies in disability management. Corporate disability management programs implemented at the work site. Ann N Y Acad Sci 1999;888:343-55.
(117) Angeloni S. Integrated Disability Management. SAGE Open 2013 Oct 28;3(4).
(118) Tompa E. A systematic review of disability management interventions with economic evaluations. J Occup Rehabil 2008;18(1):16-26.
(119) Williams RM. Perspectives on workplace disability management: a review of the literature. work 2002 Jan 19;19(1):87-93.
(120) Verjans M, Bruyninx K, Gailly J. DM@work: disability management in Belgische ondernemingen. Prevent, Brussel; 2011.
(121) Verjans M, Rommel A. Intro-DM: Dis-ability management als meerwaarde bij jobbehoud en re-integratie. Prevent, Brussel; 2008.
(122) Weir R. Interventions for disability management. Clin J Pain 2001;17(4 Suppl):S128-S132.
(123) Rick O, Kalusche EM, Dauelsberg T, König V, Korsukéwitz C, Seifart U. Reintegrating Cancer Patients Into the Workplace. Deutsches Arzteblad International 2012 Oct 19;109(42):702-8.
(124) Roelen CA. Trends in return to work of breast cancer survivors. Breast Cancer Res Treat 2011;128(1):237-42.
(125) Short PF, Vasey JJ, Tunceli K. Employment pathways in a large cohort of adult cancer survivors. Cancer 2005 Mar 15;103(6):1292-301.
(126) Tamminga SJ. Enhancing return to work of cancer patients. Amsterdam: Faculty of Medicine of the University of Amsterdam (UvA); 2012.
(127) Vidor C, Leroyer A, Christophe V, Seillier M, oncel J, an de Maële J, et al. Decrease social inequalities return-to-work: development and design of a randomised controlled trial among women with breast cancer. BMC Cancer 2014;14(1):1-10.
(128) Commission for the Protection of Privacy (CPP). The Privacy Act. 2016. 8-7-2016.
Ref Type: Online Source

(129) Rommel W, Neefs H, Verhaegen H, Desplenter B. Werken na kanker: welke problemen ervaren (ex-)patiënten die het werk hervatten? (Working beyond cancer: what problems do (ex-)patients experience when wanting to get back to work?). Vlaamse Liga tegen Kanker; 2012. Report No.: September 2012.
(130) Vermeulen SJ, Anema JR, Schellart AJ, van Mechelen W, van der Beek AJ. Intervention mapping for development of a participatory return-to-work intervention for temporary agency workers and unemployed workers sick-listed due to musculoskeletal disorders. BMC Public Health 2009;l 2(9):216.
(131) Detaille S, van der Gulden J, Engels J, Heerkens Y, van Dijk F. Using intervention mapping (IM) to develop a self-management programme for employees with a chronic disease in the Netherlands. BMC Public Health 2010;10(1):353.
(132) Ammendolia C, Cassidy D, Steensta I, Soklaridis S, Boyle E, Eng S, et al. Designing a workplace return-to-work program for occupational low back pain: an intervention mapping approach. BMC Musculoskelet Disord 2009;10:65.
(133) McEachan RR, Lawton RJ, Jackson C, Conner M, Lunt J. Evidence, theory and context: using intervention mapping to develop a worksite physical activity intervention. BMC Public Health 2008;22(8):326.
(134) van Oostrom SH, Anema JR, Terluin B, Venema A, de Vet HC, van Mechelen W. Development of a workplace intervention for sick-listed employees with stress-related mental disorders: Intervention Mapping as a useful tool. BMC Health Serv Res 2007;15(7):127.
(135) Vonk Noordegraaf A, Huirne JAF, Pittens C, van Mechelen W, Broerse JEW, Brölmann HAM, et al. eHealth program to empower patients in returning to normal activities and work after gynecologival surgery: intervention mapping as a useful method for development. Journal of Medical Internet Research 2012;14(5 / e124).
(136) Munir F, Kalawsky KEA, Wallis DJ, Donaldson-Feilder E. Using intervention mapping to develop a work-related guidance tool for those affected by cancer. BMC Public Health 2013;13(6).
(137) Meriano C, Latella D. Introduction. In: Meriano C, Latella D, editors. Occupational Therapy Interventions Function and Occupations.Thorofare: SLACK Incorporated; 2008. p. 1-34.
(138) Godderis L, Désiron H, Verjans M, Lambreghts C, Mylle G, Vandenbroeck S. Effective rehabilitation and return to work requires an personalized multidisciplinary approach with interventions at work. 2015.
(139) Nilsson MI, Peterson L-M, Wennman-Larsen A, Olsson M, Vaez M, Alexanderson K. Adjustment and social support at work early after breast cancer surgery an its associations with sickness absence. psycho-oncology 2013;2013(22):2755-62.
(140) Shaw L. Are you listening? External challenges in work rehabilitation practice: enabling return to work through a client-centred approach. Occupational Therapy Now 2000 Sep 2;2(5):13-5.
(141) Freed BB, Sharma R, Fox D, Solis M, Harway M, Deshields T. Work Interrupted: Assessing the Impact of Work-Related Distress on Psychological Adjustment to Cancer. psycho-oncology 2012 Feb 1;21(s1):1-130.
(142) Frazier LM, Miller VA, Miller BE, Horbelt DV, Delmore JE, Ahlers-Schmidt CR. Cancer-Related Tasks Involving Employment: Opportunities for Clinical Assistance. J Support Oncol 2009;7(6):229-36.
(143) Arbesman M, Lieberman D, Metzler CA. Using Evidence to Promote the Distinct Value of Occupational Therapy. The American Journal of Occupational Therapy 2014 Jul;68(4):381-5.
(144) Bartholomew LK, Parcel GS, Kok GJ. Intervention mapping: a process for developing theory- and evidence-based health education programs. Health Educ Behav 1998;25:545-63.
(145) Bartholomew LK, Parcel GS, Kok GJ, Gottlieb NH. Intervention Mapping: designing theory and evidence-based health promotion programs. 1 ed. Mountain View, California: Mayfield Publishing Company; 2001.
(146) Bartholomew LK, Parcel GS, Kok G, Gottlieb NH. Planning health promotion programs: an Intervention Mappping approach. San Francisco, CA: Jossey-Bass; 2006.

(147) Brendryen H, Johansen A, Nesvag S, Kok G, Duckert F. Constructing a Theory- and Evidence-Based Treatment Rationale for Complex eHealth Interventions: Development of an Online Alcohol Intervention Using an Intervention Mapping Approach. JMIR Res Protoc 2013;2(1):e6.
(148) Hand C, aw M, McColl MA. Occupational Therapy Interventions for Chronic Diseases: A Scoping Review. The American Journal of Occupational Therapy 2011 Jul;65(4):428-36.
(149) Lovarini M. Critically appraised paper. Higher return-to-work rates can be achieved for workers with musculoskeletal pain who have a medium or poor prognosis for return to work if they receive light or extensive multidisciplinary treatments. australian occupational therapy journal 2004 Mar;51(1):53-4.
(150) Pransky G. Improving return to work research. Journal of Occupational Rehabilitation 2005 Dec 15;15(4):453-7.
(151) Salmi P. Outcome of multidisciplinary investigations of long-term sickness absentees. Disability & Rehabilitation 2009 Jan 31;31(2):131-7.
(152) World Federation of Occupational Therapists. Aims of Occupational Therapy. http://www wfot org 2011 [cited 2014 Oct 5];(World Federation of Occupational Therapists)Available from: URL: http://www.wfot.org/Portals/0/PDF/STATEMENT%20ON%20OCCUPATIONAL%20THERAPY%20300811.pdf
(153) World Federation of Occupational Therapists. Definition of occupation. 2016. 25-5-2016. Ref Type: Online Source
(154) Cogan AM, Blanche EI, Diaz J, Clark FA, Chun S. Building a Framework for Implementing New Interventions. OTJR: Occupation, Participation and Health 2014 Oct 1;34(4):209-20.
(155) Green LW. Making research relevant: if it is an evidence-based practice, where's the practice-based evidence? Family Practice 2008 Dec 1;25(suppl 1):i20-i24.
(156) Kovacs RJ. Using Practice-Based Evidence to Reduce Disparities in Care: A Virtuous Cycle Turns. Journal of the American College of Cardiology 2015 Sep 15;66(11):1234-5.
(157) Kronenberg F. Doing well-Doing right TOGETHER: A practical wisdom approach to making occupational therapy matter. New Zealand Journal of Occupational Therapy 2013 Apr;60(1):24-32.
(158) Schaaf RC. Creating Evidence for Practice Using Data-Driven Decision Making. American Journal of Occupational Therapy69(2).
(159) Noben C. Investing in employability interventions? Methodological challenges and economic evaluation results. Maastricht , the Netherlands: Universiteit Maastricht; 2015.

SUMMARY

Of the more than 10.000 newly diagnosed breast cancer (BC) patients in Belgium, the mean age of 62 is decreasing every year due to an increase in BC incidence in younger people. At the moment, almost 30% of BC diagnoses in Belgian women occur before the age of 65. With 5-year survivals that stretch beyond 80%, and survival rates evolving in a positive trend, many BC patients are confronted with questions regarding (return to) work (RTW). The burden of disease and treatment affects personal, social and financial aspects as well as health aspects of patients' lives. Thereby, it affects patients' quality of life (QoL), functionality and participation in society. As treatment focuses mainly on the cancer itself, BC patients report unmet needs regarding psychosocial issues during treatment and beyond. For working-age BC patients, being able to work (again) does not only mean a return to 'normalcy', it also contributes to the restoration of other important aspects of their lives (e.g. providing an income for themselves and their loved ones, having social contacts, personal growth, etc.). Being able to return to work is far from self-evident for any cancer patient and appears even more problematic for women. International research as well as Belgian research has shown that almost 40% of working-age BC patients do not return to work successfully. This explains the needs that are expressed by BC patients regarding support that could help them to maintain or regain work.

To date, not only the needs of patients regarding support in RTW remain unmet, but in addition programmes that support RTW in BC patients are not yet available in a structural way. In the Belgian legal and social context, an evolution is currently ongoing, with a shift from an income-compensation model to a participation-support model. This evolution is encouraging towards RTW support for many patients with chronic health issues. However, it challenges health care and social systems to provide services that are tailored to patients' needs. Furthermore, not only BC patients but also other stakeholders (e.g. employer, co-worker, and social security) are faced with unsolved questions when RTW of BC patients is at stake. In this study, RTW is considered as the target of a process, mutually agreed upon by stakeholders who participate in the RTW process of an individual BC patient.

Research clearly indicates that RTW support has to be health care based and be provided as early as possible during survivorship of BC patients. Therefore, the RTW intervention we aim to develop in this PhD study will be hospital based and available for BC patients from the moment of diagnosis. In order to integrate RTW support with the current care by multidisciplinary teams (MDT), it is necessary that team members can use competencies needed to do so.

We started our research by investigating the effectiveness of OT interventions on RTW in diverse patient groups (study 1). Studies on OT interventions for RTW in BC patients could not be found. Our search of peer-reviewed papers using electronic databases (Cinahl, Cochrane Library, Ebsco, Medline

(Pubmed), and PsycInfo) focussed on randomised controlled trials and cohort studies published in English from 1980 until September 2010. Of 1,532 papers initially selected with pertinent titles, we retained six studies that met our quality criteria, of which only two described precisely the content of the OT intervention. Systematically reviewing (the effectivity of) OT interventions on RTW was challenging due to varying populations, different outcome measures, and poor descriptions of methodology. Our results showed moderate evidence for OT interventions - when part of rehabilitation programs – increasing RTW rates.

Study 2 was set up to enable us to explore experts' opinions on OT interventions for RTW in BC patients in the Belgian context, by: i) topic-interviews with all heads of OT departments in Flemish University Hospitals (n=5) and ii) four focus group interviews with care professionals in oncological rehabilitation, some of which were BC survivors at the same time (n=41). The experts agree RTW interventions should be integrated in multidisciplinary teamwork, have a holistic and client-centred approach, start early in the rehabilitation process, include workplace visits as well as contacts with relevant stakeholders, and use goal-setting to start up tailor-made rehabilitation that links assessment of abilities to work requirements. According to the experts, OT guided RTW interventions might be useful for BC patients when integrated in regular health care and compliant with the above-mentioned components. The experts refer to occupational therapists as professionals who effectively can answer BC patients' unmet needs regarding RTW due to OT competences and skills in bridging between health care and workplace. The experts agree on organisational and financial barriers that should be removed at a Belgian legal and a societal level (e.g. not reimbursing for inclusion of this type of support through health care insurance). The results of study 2 also clarify the lack of a theoretical foundation to base an OT guided RTW intervention for BC patients on.

Study 3 aimed to identify a theoretical framework for an OT intervention in BC. We determined criteria (e.g. conceptual OT model multidisciplinary, ICF referred, RTW in BC) to be used to select these models. Referring to the lack of BC specific information we found in study 1, we also considered potential adaptations that would be necessary to match the OT model to BC patients' needs. Using research specific criteria derived from OT literature, a search in nine electronic databases was conducted to select articles that describe conceptual practice OT models. No OT model for RTW in BC could be identified, indicating a need to fill this gap. A content analysis of those models complying with - at least - two of the selection criteria was realised. This resulted in the selection of three models: Canadian Model of Occupational Performance (CMOP), Model of Human Occupation (MOHO), Person Environment Occupation Performance model (PEOP). The MOHO had the highest compliance rate with the criteria. However, in order to enhance usability in BC, some adaptations are needed (e.g. indications for better treatment, work-outcomes and longitudinal process factors). We added to this model insights from models that support RTW in BC patients but were not specific for OT. Study 3 resulted in an

‘organizing model of OT practice for RTW in BC’ that is to be used as a basis for the RTW intervention this PhD study aims for.

In order to guide the development process in this PhD study, Intervention Mapping (IM) was used in study 4, in combination with the results of studies 1, 2, and 3. Advocating a systematic use of research literature, the IM approach presents a logical, methodical, step-by-step procedure that helps to organize researchers’ thinking as they move on from theory and evidence to practice. Study 4 presents four of the six IM development steps in total. Steps 5 and 6 are part of the evaluation, they will be organised in further research. A five-phased RTW intervention guided by a hospital-based occupational therapist is proposed: 1) assessing the worker, the usual work and contextual factors which impact on (re-)employment; 2) exploring the match / differences between the worker and the usual work; 3) Establishing long term goals, broken down into short term goals; 4) setting up tailored actions by carefully implementing results of preceding phases; and 5) executing the program as described in phase 4.

This PhD study presents some clear results: i) to support BC patients in solving problems regarding RTW, competencies of occupational therapists are useful to facilitate maintaining or regaining patients’ labour-participation; ii) results of international literature and of the Belgian situation regarding RTW for BC patients present fragmented information, with differences in (roles of) stakeholders and contexts; iii) developing a more “generic” model that relies on the existing frames of references and available evidence makes it possible to fill in the existing shortages in current health care, and iv) using IM enables determination of elements essential for a RTW intervention for Belgian BC patients.

Further research will have to focus on feasibility and process evaluation of the intervention that will be described in detail. With the funding of KOTK[1], this research will be performed and might lead to a well-defined and implementable RTW intervention for which a multicentre randomised controlled trail effectivity research could be set up. The ‘generic’ model we developed might be elaborated and tested for its ‘generic’ and ‘practicable’ quality in cross-country comparisons.

[1] KOTK: Kom Op Tegen Kanker, (Stand Against Cancer) is a Flemish non governmental organization that strives for patients’ rights for the best possible cure and care http://www.komoptegenkanker.be/onze-organisatie

SAMENVATTING

Bij de ruim 10.000 nieuw gediagnosticeerde borstkankerpatiënten (BK) in België daalt de gemiddelde leeftijd van 62 jaar elk jaar door de toename van BK bij jongere mensen. Op dit moment worden bijna 30% van de BK-diagnoses gesteld bij Belgische vrouwen vóór ze 65 zijn. Met overlevingsperiodes van 5 jaar bij meer dan 80% en met overlevingskansen die de positieve kant uitgaan, zien veel BK-patiënten zich geconfronteerd met vragen over (een terugkeer naar) hun werk (RTW). De ziekte en behandelingen belasten persoonlijke, sociale en financiële aspecten van het leven van de patiënten – en dus niet alleen hun gezondheid. Het heeft ook een substantiële invloed op de levenskwaliteit van de patiënt (QoL), op hun functioneren en op hun deelname aan het maatschappelijk leven.

Behandelingen leggen vooral de nadruk op de kanker zelf, en BK-patiënten melden dat ze zowel tijdens als na hun behandeling onvoldoende psychosociale ondersteuning krijgen. Voor BK-patiënten op werkende leeftijd betekent terug aan de slag (kunnen) gaan niet alleen een terugkeer naar een normaler leven, het draagt ook bij tot het herstel van andere belangrijke aspecten van hun leven (een inkomen verwerven voor zichzelf en hun naasten, het herstellen van sociale contacten, persoonlijke ontwikkeling, enz.). Terug aan het werk kunnen, is helemaal niet evident voor alle kankerpatiënten en lijkt zelfs nog meer problematisch voor vrouwen. Internationaal maar ook Belgisch onderzoek toonde aan dat bijna 40% van de BK-patiënten op actieve leeftijd niet opnieuw met succes aan de slag gaan. Dat verklaart de nood die BK-patiënten hebben aan ondersteuning die hen kan helpen hun baan te behouden of elders aan de slag te gaan.

Momenteel blijven niet alleen de noden van de patiënten inzake RTW onvervuld, ook de programma's die hen daarbij moeten ondersteunen zijn nog steeds niet structureel beschikbaar. In de Belgische wettelijke en sociale context vindt momenteel een omwenteling plaats van een inkomenscompensatiemodel naar een participatie-ondersteuningsmodel. Deze evolutie is een hart onder de riem inzake RTW voor veel patiënten met chronische gezondheidsproblemen. Maar het daagt de gezondheids- en sociale systemen wel uit om diensten te gaan ontwikkelen op maat van de patiënten. Bovendien hebben alleen de BK-patiënten onbeantwoorde vragen wanneer het gaat over werkhervatting van BK-patiënten. Ook andere belanghebbenden (werkgever, collega, sociale zekerheid, enz.) hebben gelijkaardige vragen. In deze studie wordt RTW beschouwd als het doel van een proces, met wederzijdse goedkeuring van de partijen die een belang hebben in het RTW-proces van een individuele BK-patiënt.

Onderzoekt maakt duidelijk dat RTW-ondersteuning moet aanvangen vanuit de gezondheidszorg en zo snel mogelijk moet voorzien worden in het verdere verloop van behandeling en het latere leven van BK-patiënten. Daarom wordt de RTW-interventie die we in dit doctoraat willen ontwikkelen aangeboden vanuit het ziekenhuis en is ze beschikbaar voor BK-patiënten vanaf het moment van de diagnose. Om

de RTW-ondersteuning te integreren met de huidige zorg door multidisciplinaire teams (MDT) is het noodzakelijk dat de teamleden de competenties kunnen inzetten die ze nodig hebben.

We begonnen ons onderzoek met het onderzoeken van de effectiviteit van ergotherapie-interventies op RTW in diverse patiëntengroepen (studie 1). We konden geen studies vinden rond ergotherapie-interventies met het oog op RTW van BK-patiënten. Onze zoektocht naar peer-reviewed papers met behulp van elektronische gegevensbanken (Cinahl, Cochrane Library, Ebsco, Medline (Pubmed), en PsycInfo) richtte zich op gerandomiseerde gecontroleerde proeven (RCT) en cohortstudies gepubliceerd in het Engels in de periode tussen 1980 tot september 2010. Van de 1.532 papers met pertinente titels die aanvankelijk werden gekozen, werden uiteindelijk zes studies weerhouden die beantwoordden aan onze kwaliteitseisen. Daarvan beschreven er slechts twee nauwgezet de inhoud van de ergotherapie-interventie. Het systematisch reviewen van ergotherapie-interventies inzake RTW vormde een hele uitdaging door de verschillen in onderzoekspopulaties, verschillende uitkomst maten en matige beschrijvingen van de methodologie. Onze resultaten toonden gematigde bewijs voor effectiviteit van ergotherapie-interventies als onderdeel van herstelprogramma's ten behoeve van werkhervatting.

Studie 2 werd opgezet om een zicht te bekomen op de mening van experten over ergotherapie-interventies bij RTW van BK- patiënten in de Belgische context. Daarvoor werd gebruik gemaakt van: i) topicinterviews met alle hoofden van ergotherapiediensten in Vlaamse universitaire ziekenhuizen (n=5) en ii) vier focusgroep interviews met zorgprofessionals uit de oncologische revalidatie, waarvan sommigen tegelijkertijd ook BK-ex BK patiënten waren (n=41). De experten vinden dat RTW-interventies een onderdeel moeten zijn van multidisciplinair teamwork, met een holistische benadering die vertrekt vanuit de cliënt, dat ze vroeg starten in het revalidatieproces, met bezoeken aan de werkplek en contacten met relevante belanghebbenden, en met het afbakenen van duidelijke doelen om een revalidatie op maat op te starten die de link legt tussen het beoordelen van vaardigheden en job vereisten. Volgens de experten kunnen RTW-interventies op basis van ergotherapie nuttig zijn voor BK-patiënten, wanneer ze geïntegreerd worden in de reguliere gezondheidszorg en op één lijn liggen met de eerder vernoemde componenten. De experten wijzen in de richting van ergotherapeuten als professionals die inderdaad tegemoet kunnen komen aan de niet-ingevulde noden van BK-patiënten inzake RTW, enerzijds door hun ergotherapievaardigheden en anderzijds doordat ze een brug slaan tussen gezondheidszorg en de werkplek.

De experts zijn het erover eens dat de organisatorische en financiële barrières moeten geruimd worden die in België bestaan op het wettelijke en maatschappelijke niveau (b.v. het niet vergoeden van dit soort van ondersteuning door de ziekteverzekering). De resultaten van studie 2 verduidelijkten ook het gebrek aan een theoretische basis om een RTW-interventie op basis van ergotherapie voor BK-patiënten op te bouwen.

Studie 3 had als doel het identificeren van een theoretisch kader voor een ergotherapie-interventie bij BK. We legden criteria vast (b.v. een conceptueel ergotherapiemodel voor RTW bij BK, multidisciplinair, volgens de ICF) om te gebruiken voor de selectie van deze modellen. Refererend aan het gebrek aan BK-specifieke informatie dat we vaststelden in studie 1 beschouwden we ook de mogelijke aanpassingen die nodig zouden zijn om het ergotherapiemodel aan te passen aan de noden van de BK-patiënten. Met behulp van onderzoeksspecifieke criteria die werden samengesteld aan de hand van ergotherapeutische literatuur, werd in negen elektronische databanken een gerichte zoekacties opgezet bedoeld om publicaties te detecteren die conceptuele ET modellen beschrijven.

We vonden geen enkel model dat RTW bij BK als focus had, waardoor duidelijk werd dat dit een nog in te vullen tekort betreft. Een content analyse van deze modellen werd uitgevoerd aan de hand van de vooraf bepaalde selectie criteria. Als resultaat daarvan konden we drie modellen weerhouden: Canadian Model of Occupational Performance (CMOP), Model of Human Occupation (MOHO), Person Environment Occupation Performance model (PEOP).

Het MOHO bleek daarvan best bij de criteria aan te sluiten. Het werd echter ook duidelijk dat de enkele aanpassingen nodig waren ten behoeve van de toepasbaarheid van dit model bij RTW voor BK-patiënten. (vb. Indicatie voor meer gerichte behandeling, werk gerichte einddoelen en het opvolgen van longitudinale proces factoren). Dit ergotherapeutische model werd aangevulde met inzichten uit modellen die specifiek RTW voor BK-patiënten als focus hadden, maar waarbij niet duidelijk werd welke zorgverleners voor de RTW ondersteuning dienden in te staan.

Resultaat van studie 3 was het ‘organising model of OT practice for RTW in BC’ dat specifiek gericht is om de theoretische basis te vormen voor de RTW Interventie waarop deze thesis gefocust is.

Om bij het ontwikkelingsproces van de RTW Interventie een degelijke en systematische aanpak te gebruiken, werd Intervention Mapping (IM) als methode toegepast. Daarbij werden de resultaten van studies 1, 2 en 3 geïmplementeerd. De IM methode pleit voor een systematisch gebruik van de literatuur via een logische, methodische en stapsgewijze procedure die onderzoekers hlpt om zorgvuldig na te denken bij het toepassen van theorie om in de praktijk bruikbare resultaten tot stand te brengen. In studie 4 worden de eerste vier van de zes stappen van de IM procedure uitgevoerd.

Stappen 5 en 6 zijn gericht op evaluatie en vormen onderdeel van vervolgonderzoek.

Als resultaat van de eerste 4 IM stappen, wordt een ergotherapeutische RTW interventie voorgesteld die uit 5 fasen bestaat: 1) evaluatie van de situatie van de BK-patiënt/werknemer, haar eigen werk, en contextuele factoren die van invloed zijn op de werkhervatting; 2) exploreren van vergelijking / afwijking tussen capaciteiten van de BK-patiënt/werknemer en vereisten van het werk; 3) vastleggen van lange termijndoelstellingen, die worden opgedeeld in korte termijndoelstellingen en concrete (therapeutische) aanpak om deze doelstellingen gericht op afstemmen van capaciteiten en vereisten op

elkaar te realiseren; 4) uitwerken van een concreet, planmatige aanpak op maat van de specifieke individuele realiteit van de BK-patiënt/werknemer zoals die naar voor komt uit de vorige 3 fasen; en 5) uitvoeren van het plan van aanpak zoals opgesteld in fase 4 (ev. mits bijsturing en aanpassing op maat van de situatie van de BK-patiënt/werknemer en op maat van de situatie op de werkvloer).

Deze doctoraatsthesis levert enkele duidelijke inzichten op: i) om BK-patiënten bij te staan bij het oplossen van problemen met betrekking tot RTW, kunnen ergotherapeutische competenties nuttig worden ingezet ten behoeve van behoud/herstel van arbeidsparticipatie; ii) resultaten van internationale en Belgische onderzoeksliteratuur levert gefragmenteerde informatie op, met grote verschillen in (de rol van) stakeholders en contexten; iii) ontwikkelen van een meer "generisch" model dat gebruik maakt van bestaande referentiekaders en beschikbare evidence maakt het mogelijk om de huidige tekorten in zorgverlening in te vullen; en iv) toepassen van IM maakt het mogelijk om die elementen te benomen en te beschrijven die essentieel zijn voor het ontwikkelen van een ergotherapeutische RTW interventie voor Belgische BK-patiënten.

Haalbaarheid en de procesevaluatie van de RTW interventie zal via vervolgonderzoek tot stand moeten komen. Daarvoor zal deze RTW interventie meer in detail moeten uitgeschreven worden. Met ondersteuning van KOTK[2] kan een nauwgezet beschreven en in de praktijk toepasbare RTW interventie worden gerealiseerd, die via een RCT op de effectiviteit ervan kan worden onderzocht met gebruik van een multi-center RCT studie. Het 'generisch' model waar deze studie de aanzet voor biedt, zou ook verder kunnen uitgewerkt worden en getest voor de generische en praktische kwaliteit aan de hand van "cross-country" vergelijkingen.

[2] KOTK: Kom Op Tegen Kanker, een Vlaamse niet-gouvernementele organisatie die opkomt voor patiënten-rechten en de best mogelijke zorg en behandeling http://www.komoptegenkanker.be/onze-organisatie

CURRICULUM VITAE:

1. Persoonlijke gegevens:

Naam : Huguette (Andrea Marcella) Désiron

Geboortedatum : 04/06/1956

Woonplaats : Hasselt

E-mail adres : Huget@act-desiron.be

2. Opleiding

Diploma	Opleidingsinstituut	Afstudeerjaar
Gegradueerde in de Arbeidstherapie	Hoger Instituut voor Paramedische Beroepen - Gent	1977
Bedrijfsergonomie & Industriële hygiëne	Universitaire Instelling Antwerpen	1990
Pedagogische bekwaamheid	Groep T-Leuven	1979
Drs. Arbeid & Gezondheid (gezondheidswetenschappen)	Universiteit Maastricht	2004
Erkenning als Europees Ergonoom	BREE / CREE	sinds 2002- heden
Erkenning als preventie-adviseur specialisatie ergonomie	Syntra Limburg	November 2014

3. Relevante Beroepspraktijk

1. Ergotherapeute (1978 - 1988)

   Opstart van de dienst Ergotherapie voor de afdelingen revalidatie en geriatrie van het Stedelijk Genees-en Heelkundig Instituut (OCMW) Tienen.

2. Docente/onderzoeker aan de opleiding ergotherapie van de Provinciale Hogeschool Limburg (PXL) (1988 – heden)

   Sinds 1988 deeltijds docente in de opleiding Ergotherapie (kennisdomein ergonomie) en sinds 2005 deeltijds betrokken bij onderzoeksopdrachten

3. Zaakvoerder – Adviseur ACT Désiron bvba / Consultant in re-integratie en ergonomische vraagstukken (1988 – heden)

   - Begeleiding van werkgevers voor oplossen van vraagstukken bij professionele re-integratie na ziekte of ongeval (secundaire en tertiaire preventie)
   - Ondersteunen van bedrijven bij het opzetten van collectieve oplossingen ten behoeve van re-integratie (procedures en implementatie van vervangarbeid, aangepast werk, geschikt werk,…)

- Ergonomische analyses, advisering en ondersteuning bij implementatie van optimalisaties (ergonomie, welzijnsbeleid, verzuimbeleid,…).
- Advisering bij ergonomische inrichting van werkplekken (kantoor, controlekamer, beeldschermwerkplekken, productie-omgevingen, etc.)
- Opleiding “ergonomie voor ergotherapeuten”: 2005 – Heden (jaarlijks)
- Bijdragen aan beheer van letselschade via evaluatie (expertise) en begeleiding bij sociale en professionele re-integratie

4. Zelfstandig medewerker Salvator Ziekenhuis (2003 -2013)
    - Bijdrage aan het multidisciplinair team van de “Limburgse Rugkliniek” voor ergonomie instructie en werkplekanalyses
5. Doctoraatstudent:
    - Sinds 2009 als deeltijds doctoraatstudent (zelf gefinancierd) betrokken bij afdeling “Omgeving en Gezondheid” van de Faculteit Medische wetenschappen van de KULeuven
6. Onderzoeker
    - Sinds 2013 vrijwillig wetenschappelijk medewerker aan de KULeuven op de afdeling “Omgeving en Gezondheid”
    - Sinds 01/03/2015 als project-onderzoeker deeltijds aangesteld op de afdeling “Omgeving en Gezondheid” van de Faculteit Medische wetenschappen van de KULeuven (KOTK-middelen)

LIST OF PUBLICATIONS

1. Désiron H, Knippenberg E, Willems B, Claes G, Neerinckx E. Occupational therapy for breast cancer survivors: improving QOL by return-to-work assistance. 2008 p. 135-6.
2. Désiron H, Knippenberg E, Willems B. Arbeidsre-integratie ten behoeve van arbeidsparticipatie en ervaren levenskwaliteit bij oncologische revalidanten (PWO project nr 2/dwo/Re05PO15). Hasselt: Provinciale Hogeschool Limburg, (D.O.P.); 2008 Aug 5.
3. Désiron HAM, Knippenberg E, Willems B, Neerinckx E. Occupational therapy for breast cancer survivors: improving quality of life by return-to-work assistance. Journal of Rehabilitation Medicine 2008 Jun;135-6.
4. Désiron HAM, Willems B, Op't Eijnde B, Claes G. Arbeidsparticipatie van ex-kankerpatiënten: verkennende literatuurstudie over de inbreng van ergotherapie bij ondersteuning van herstel van (arbeids)participatie voor ex-kankerpatiënten Acta Ergotherapeutica Belgica 2009;3:26-35
5. Désiron H. Occupational therapy and return to work for breast cancer survivors. WFOT Bulletin 2010;61:45-51.
6. Désiron H, Peters E, Vaes P. Ergotherapie en (herwinnen van) arbeidsparticipatie. In: Vlaams Ergotherapeutenverbond, editor. Jaarboek Ergotherapie 2011. 2011 ed. Leuven: Acco; 2011. p. 213-36.
7. Tiedtke C, Knops L, Désiron H, Dierckx de Casterlé B, Donceel P, de Rijk A. Supporting Return-to-work in the face of legislation: Stakeholders' Experiences with Return-to-Work after Breast Cancer in Belgium. Journal of Occupational Rehabilitation 2011;22(2):241-51.
8. Désiron H. Ergothérapie et retour au travail patients atteints de cancer du sein (occupational therapy and return to work for breast cancer survivors). 2011 May 23; Paris 2011 p. 12-6.
9. Désiron HAM, Biesmans K, Reyskens A. Ergotherapeutische Methodiek in Oncologische Revalidatie (EMIOR). http://esf-agentschap.be/nl/projectenkaart/emior-ii; 2012. Report No.: ESF project nr 2144.
10. Désiron HAM, Donceel P, de Rijk A, Van Hoof E. A Conceptual-Practice Model for Occupational Therapy to Facilitate Return to Work in BC patients. Journal of Occupational Rehabilitation 2013 Feb 20;23(4):516-26.
11. Désiron HAM. Ergotherapie bij Borstkanker ?! In: Vlaams Ergotherapeutenverbond, editor. Jaarboek Ergotherapie 2013.Leuven: Acco; 2013. p. 157-81.
12. Désiron HAM, Donceel P, Godderis L, Van Hoof E, de Rijk A. What is the value of occupational therapy in return to work for breast cancer patients? A qualitative inquiry among experts. Eur J Cancer Care (Engl) 2014 Jun 24;24(2):267-80.
13. Désiron HAM. Arbeidsparticipatie en ergotherapie bij (borst)kanker Stand van zaken?! Nederlands wetenschappelijk tijdschrift voor Ergotherapie 2015;2014(3-4):5-25.
14. Désiron HAM, Crutzen R, Godderis L, Hoof E, Rijk A. Bridging Health Care and the Workplace: Formulation of a Return-to-Work Intervention for Breast Cancer Patients Using an Intervention Mapping Approach. Journal of Occupational Rehabilitation 2016;1-16.
15. Decuman S, Désiron H, Dom M, Gabriel L, Van De Velde D, Vermeulen K. Disability Management. In: FWRO-FRSR (fonds voor wetenschappelijk reumaonderzoek), editor: S. Decuman. Allen Actief.... ook met Reuma.Brussel: KBVR; 2015. p. 16-25.

EPILOOG EN VOORUITZICHTEN

Het parcours voor deze studie, dat in 2009 een start genomen heeft en nu aan zijn eindpunt komt, heb ik kunnen lopen dankzij de schare supporters onderweg die met raad en daad, met humor en geïnteresseerde ernst, met aandacht en scepsis gezorgd hebben voor broodnodige en zeer gewaardeerde ondersteuning.

- Francis & Moniek, Ria & Bert, Erna &Walter merci voor broederlijke-zusterlijke steun.
- Wouter, Lies en Bram, ik ben jullie oprecht dankbaar voor het onvoorwaardelijke geloof in "jullie oudje", zelfs (!) voor de grappen die jullie daarover zo nodig moesten maken.
- Yuri, Bert en Heidi, merci voor jullie spontane aansluiting bij deze supportersclub en de warme steun die jullie bieden.
- Ylva, Jelle, Lowe en Flynn, dank je wel om me er op tijd aan te herinneren dat elke wandeling zijn rustpunten nodig heeft om met nieuwe energie de volgende etappe aan te vatten.

We komen nu bij het einde van dit parcours waarin Peter weliswaar niet meer zelf mee stapt, maar hij is er wel degelijk bij. Het afronden van deze route zou niet gelukt zijn zonder het gevoel dat hij over mijn schouder meekijkt en zoals vanouds - achteroverleunden in zijn stoel, met zijn vingers in zijn haar draaiend en pretlichtjes in zijn ogen - bedenkingen naar voor schuift die ervoor zorgen dat ik de wandelkaart nog eens ter hand neem en terug op het juiste pad geraak.

Met Lode als gids leer ik dat "minder ook meer kan zijn" en stap ik met groeiende bagage die alsmaar lichter aanvoelt rustig verder. Tegelijk waren Angelique en Elke ook gedurende de hele route aandachtig met raad en daad aanwezig. De kiezel in mijn schoen die onderweg knelde, kreeg duiding, begrip en kundig verzorgingsadvies… Twijfel over het gekozen pad nodig om een overgelopen beek te doorkruisen kan rekenen op een aandachtig luisterend oor. De kamer die in Maastricht voor me open stond en de stimulerende interventie van Rik zorgden voor inspiratie en draagkracht. Chantal en Marie-Rose leverden onderweg de nodige kritische reflecties en zetten vraagtekens die zorgden voor verheldering en bijkomende inzichten.

Aanzet voor deze wandeling was de overtuiging dat niets zozeer zorgt voor vermeerderen van kennis, dan het delen ervan. Daarom bedank ik al die andere mensen die me via het delen van hun kennis en ervaring geholpen hebben mijn eigen pad te lopen en zo ook weer mijn bijdrage te kunnen leveren aan ontwikkelen van kennis en inzichten. In het bijzonder de deelnemers aan het Europese netwerk "CANWON" verdienen hierbij een vermelding voor hun kritische reflecties, de warme collegialiteit, en hun bemoedigende respons die handige tips bevatte voor het parcours en de wandeltechniek en nog zoveel meer. Dit onderzoek is een deel van een breder project dat voor mensen die geconfronteerd worden met borstkanker een venster wil openen op een perspectief dat hen helpt om hun eigen pad uit

te stippelen. De financiering die Kom Op Tegen Kanker ter beschikking stelt om dit onderzoek ook effectief in de praktijk te kunnen verder zetten, verdient dan ook een welgemeend dankwoord.

Het gezelschap dat op gezette momenten deze wandeling energie en inzicht verschafte, stapt onder de naam “RTW-WA” met Lode als groepsleider. Dankzij de experten in organisatie en logistieke ondersteuning op de afdeling “Omgeving & Gezondheid”, werd er bij het vermalen van de vele kilometers die nu achter me liggen gezorgd voor opvang bij moeilijke momenten en voor verlichting als de stafkaart moeilijker leesbaar werd. Lies, Jeanine, Corinne, Sophie, Marie-Claire, Lotje & Elke; ik verheug me erin om deze wandeling met jullie samen te kunnen afronden en alvast alweer plannen te maken voor de volgende trip. Heel, heel erg bedankt dat ik met jullie op weg mag – blijven – gaan. Sara, merci om wegwijzers in het bos van procedures en administratie aan te duiden. Voor Jeanine en Lies is er een extra dikke dank u wel voor alle valkuilen die jullie hebben weggewerkt en voor al die keren dat mijn hoofd op jullie schouders even mocht rusten!! En natuurlijk ook aan alle andere collega’s op de afdeling “gezondheid & omgeving”: thanks for so much support.

De wandelaar op een jarenlang parcours heeft naast rustpunten ook nood aan steunpunten die niet alleen onderweg op belangrijke kruispunten mee juichen voor het behaalde resultaat, maar er ook zijn als allerlei kwaaltjes, kopzorgen en andere obstakels de kop op steken. De schouderklopjes van Isabel, haar warme relativeren en de zekerheid van haar onvoorwaardelijke steun “en cours de route” zorgen voor welgekomen steun. Ook Tilly stapt al vele jaren mee en zorgt met al haar hartverwarmende zijn mee voor dat het stappen aangenaam blijft. Dat is ook zo voor de zorgzame aandacht van Heidi. Ik prijs mezelf gelukkig dat ik met jullie al zo ver heb mogen samen stappen en ik hoop dat we nog vele kilometers kunnen doorgaan!

Deze “epiloog met blik vooruit” sluit ik heel graag af met een diepgemeende dankjewel voor To, de man met wie ik al zovele jaren samen door het leven wandel en die letterlijk en figuurlijk de rots is op wie ik tot nu toe heb mogen steunen, ook in het afleggen van dit parcours. Als “compagnon de route” en met je rustige vastheid is jouw liefdevolle aanwezigheid op dit parcours een continuüm dat zo stabiel aanwezig is dat ik er met mijn ogen toe op kan vertrouwen. Jij stelt vragen maar trekt de keuzes die ik maak niet in twijfel, je geeft me kans ze te toetsen. Je geduldige aanwezigheid, de verrukkelijke wijze waarop je voor catering, voetverzorging en andere ondersteuning zorgt, verdienen een dank waarvoor ik woorden tekort kom. Dit resultaat is er vooral ook omdat jij er bent….

Hasselt, 24/10/2016