

# Bridging Health Care and the Workplace: Formulation of a Return-to-Work Intervention for Breast Cancer Patients Using an Intervention Mapping Approach

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**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

## Introduction

An increasing number of breast cancer (BC) patients younger than 60 enter chronic care after surviving BC. They cope with fatigue, anxiety, loss of social and professional participation, and loss of Quality of Life (QoL)

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[1, 2]. BC patients experience specific problems in return to work (RTW), which indicates the need for adequate interventions [1, 3, 4]. Helping BC patients to maintain or resume (labour-)participation provides substantial support for BC patients in restoring their QoL [5–8].

RTW interventions are always embedded within the specific legal context of the country. In many countries, efforts aimed at RTW are ad hoc and not structurally integrated nor refunded by any government structure [2, 3, 9–11]. In the context of a social insurance system that focuses on protecting income, RTW in Belgium is not well known among BC patients, their employers and health care workers [2, 3, 12–15]. Although Belgian employers are obliged by law to organise occupational health care for employees, occupational physicians play only a minor role in sickness and disability management [16]. Consequently, to date, guidance and advice on RTW is not an explicit part of the day-to-day work of caregivers, indicating the reason for the gap between health care and work that is experienced by patients and caregivers and described in the international literature. This leads to increasing disappointment, fragmentation of care, disillusion and job loss (after resuming work) for patients and employers [2, 3, 12–16].

Referring to the International Classification on Functioning, Disability and Health (ICF) [17], we described a specific OT model for RTW in BC (see Fig. 1). This model is based on the model of human occupation (MOHO) but adaptations were proposed to create a better fit with specific psychosocial needs throughout the patient trajectory [3].

Preparative work for this research indicates that the active participation of all stakeholders (including the patient) requires an interdisciplinary approach, the use of shared decision-making and early and customised support from the moment of diagnosis [10, 14, 18–24]. These functional requirements must be obvious in the RTW intervention that this paper aims to develop. The international literature makes clear that Intervention Mapping (IM) is an effective method for achieving this goal [25–32]. The IM approach is a logical, methodical, step-by-step procedure that helps researchers to organise their thinking as they move on from theory and evidence to practice while advocating 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 implemented in the patient's actual life [27, 28].

The ultimate goal of RTW interventions is to provide adequate care that empowers BC patients to maintain or resume (labour-)participation and—thereby—enhance their quality of life. In this paper we use the term “(labour-)participation” to indicate that the content relates not only to employed BC patients who are on sick leave (needing to resume employment), but also includes BC patients who

combine work and treatment (needing to maintain work). We assumed an OT intervention to be the necessary link between health care and workplace [33]. The objective of this paper is to describe the systematic development of an RTW intervention using the Intervention Mapping approach.

## Method

The protocol provided by IM describes 6 steps, the first 4 of which we followed as described below [34–36]. As this paper focuses on the development of the intervention, step 5 (planning for programme 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 keywords: “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, 19, 37] with the results of formative research [4, 5, 37, 38] during 2 discussion sections by the authors, the psychosocial needs of BC patients regarding RTW were listed.

### 2. Identification of outcomes, performance objectives and change objectives:

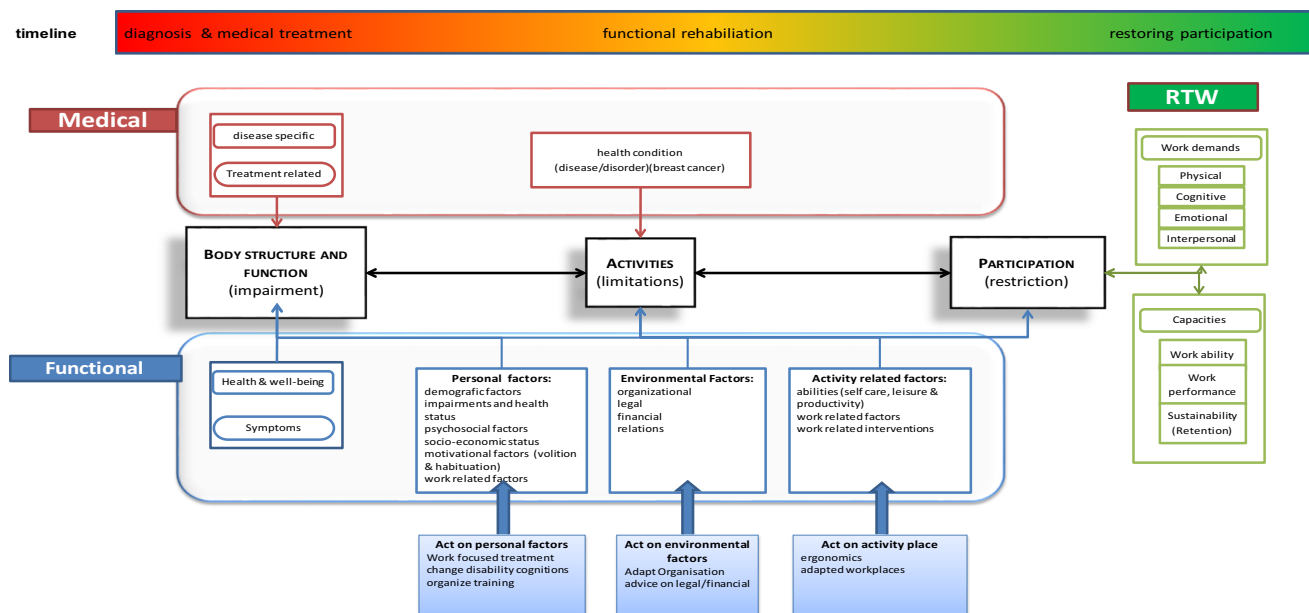
This step aims to define what should change in the behaviour of the target group and/or the environment in order to respond to the RTW needs. The authors used 2 group discussions to discuss the results of a literature search using IM guidelines. Therefore, the IM guidelines were supplemented with literature on the use of IM in other target groups and/or problem settings [25–29, 32, 36].

### 3. Selecting theory and evidence-based methods and practical applications:

Following the IM protocol, we identified theoretical methods that can influence a change in determinants. These methods were linked to the change objectives [39–47]. 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 the 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:

The results of this step are creative programme



**Fig. 1** Organising model of practice for RTW in BC (OM) [4]

components and materials in support of the intervention goals 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 fit for use in OT practice regarding RTW in BC patients. During 2 discussion sessions, we used the scientific material mentioned earlier to discuss interventions regarding each determinant and change objective. This intensive approach enabled us to define specific components and materials that describe the scope and content of the intervention.

## Results

### Step 1. Psychosocial needs assessment

Without ignoring BC patients' medical needs, this section gives an overview of their psychosocial needs in terms of having to deal with RTW combined with disease and treatment.

- The need to take RTW into account in the care process, right from the moment of diagnosis. Being able to get back to work is experienced as beneficial for quality of life in the healing process (e.g., by supporting participation in normal life and social activities and helping BC patients to avoid the financial burden caused by long-term sick leave) [48, 49]. After diagnosis, the cure processes focus mainly on treatment

of the disease and management of side effects. BC patients express a need for additional psychosocial support in RTW, which is not adequately addressed [2, 11]. During and after treatment, BC patients also need support to return to their activities, to cope with the illness and consequences of the treatment, and to resume participation in a sustainable way [50, 51]. Sustainable labour participation is defined as having the ability to keep working for at least 12 months in such a way that the patient can maintain compliance with the rules and regulations of the employer on the one hand and social insurance and health and safety at work on the other. As in other countries where the social insurance system is oriented towards income protection, the Belgian system does not stimulate the implementation of a work-focused intervention in a systematic, structured way [11, 52]. Consequently, BC patients experience the need to get help, right from the moment of diagnosis to prevent the loss of job and participation [6, 13].

- The need for recurrent information adapted to the specific situations during the patient's transition from patient to survivor. Certainly in the first 3–6 months after diagnosis, patients do not feel able to manage their RTW process, even though they may be very concerned about it [1]. They ask for assistance during conversations with other stakeholders (e.g., employer, social security administrators), and express the need for guidance in the process of restoring their abilities. This assistance includes several aspects, as indicated in the model

presented earlier (Fig. 1): patient's personal factors (e.g., demographic factors, socio-economic status, impairment and health), their individual roles and habits (habituation), their ability to function in daily life (mind-brain-body performance) and values and interests (volition). These aspects, including the patient's individual context and personality, form the starting point for therapeutic interventions.

- The need to facilitate informed decisions about how to continue their lives during and after treatment. The process of transition from patient to survivor differs between and within individuals [52, 53]. Tiedtke et al. [2, 15, 54] not only distinguished different patient perspectives, but also recognised that patients can shift from one perspective to another as life goes on. Hence, patients need to be supported in (re-)evaluating their situation using designated information at different moments in time during treatment and rehabilitation.
- The need for assistance when taking decisions about actions needed and support in executing actions that—consequently—are to be taken.

The OM provides a framework that enables occupational therapists to address the patient's need for support to resume their daily activities, including work [1, 2, 49]. BC patients indicate that, apart from hindering their own RTW process, the lack of information from other stakeholders is a burden for them [3, 49, 55]. Both scientific research and clinical findings indicate the need to offer multidisciplinary assistance to BC patients right from the moment of diagnosis [3, 10, 40, 50, 56–60]. In order to address BC patients' needs, rehabilitation efforts must be “tailor-made” and focus on the patients' vulnerabilities, individual job demands and work ability [5]. This includes taking into account employers' RTW policies as well as the rules and regulations of other stakeholders (e.g., social insurance provider).

In addition, occupational therapists need to gather “evidence-based best practice” when supporting BC patients in (labour-)participation:

- As in RTW programmes for other patient populations, OT needs to make use of a participatory ergonomic approach [27, 61]. As our research and international literature indicates, OT assistance must consist of tailor-made support programmes, including all stakeholders. In addition, OT should implement case management and make use of workplace visits and adapted work conditions [10, 60, 62–64].
- The need to highlight those OT competences that focus on enhancing patient participation. Currently, OT for (breast-)cancer patients focuses more on self-care and palliative goal-setting than on assisting

survivors in resuming an active role in society [37, 42, 65]. OT competences that aim to coach all those involved in the patient's life (e.g., partner, family, employer, social insurance physician, etc.) are a particular focus of attention on OT training courses and need to be incorporated in current OT practice [10, 33, 66–70].

- The need for a framework that conceptually guides RTW support for BC patients. Together with the MOHO, the ICF was used as a theoretical framework to develop the OM (see Fig. 1) to support the multidisciplinary teamwork where OT was embedded [4]. Combining OT reasoning with the timeline of BC care, the OM acknowledges the therapist's need to deliver a tailored RTW service in the different phases of transition from patient to survivor [4].
- The need to integrate OT in oncology care. The guidelines described by Crompton et al. [42] advocate that OT should be included in usual care for BC patients, but they also acknowledge the lack of OT in many oncology care centres in UK. The need for OT to be more corroborated when RTW questions come up in a patient's evolution is recognised in studies both on RTW and on OT in BC [10, 46, 47, 62, 71].
- The need to deliver care that addresses the patient's needs more directly. Désiron et al. [10] indicated that OT needs (1) to be part of an integrated, holistic and client-centred approach; in a legal and societal environment that supports RTW, (2) to be embedded in a multi-disciplinary setting that includes psychosocial care; (3) to be available in the very early stages of the rehabilitation process of the BC patient; (4) to support the goal-setting of the RTW process with a focus on the abilities of the patient and linked to the total QoL of patients; and (5) to include workplace visits to observe the patient's situation and make contact with all stakeholders [10, 72].

We used the IM protocol (see Fig. 2) 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 abovementioned needs.

#### Step 2. Identification of outcomes, performance objectives and change objectives

As indicated by Bartholomew et al. [34–36], 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. When defining performance objectives, the IM protocol prescribes “flipping over” the needs of the

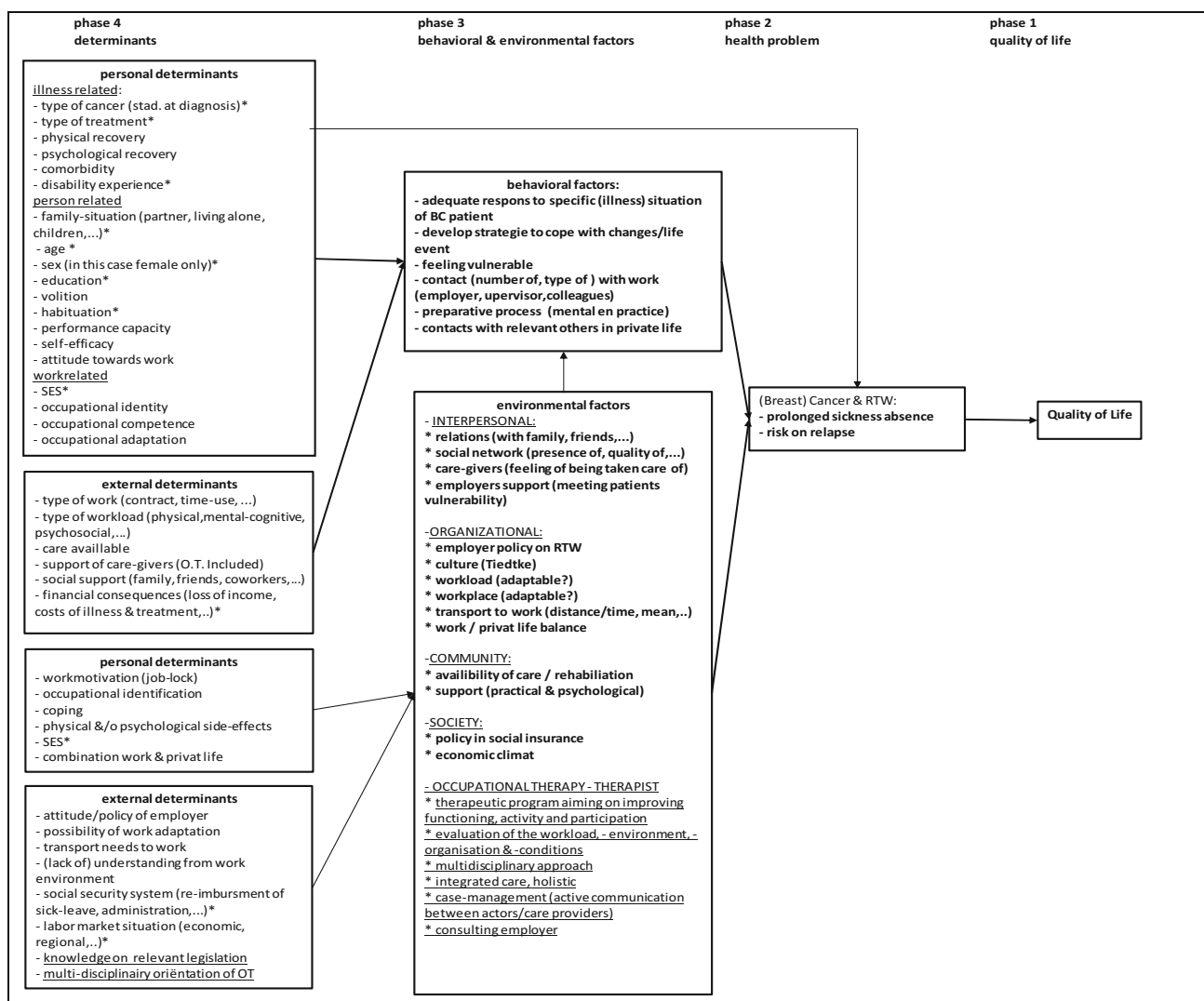
targeted population (as detected in step 1) to be able to indicate this desired behaviour and environmental conditions.

The behavioural outcomes (targets of the intervention) were defined as the result of group discussions among the authors, and were divided into patient-oriented outcomes and OT-oriented outcomes, both sharing the RTW interventions' final objective (enhancing QoL). The RTW intervention aims to facilitate (labour-)participation but does not necessarily include the obligation for patients to return to their jobs.

In Table 1, determinants are organised as illness-related, personal-related, and work-related determinants to outline 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 the international literature and the analysis of the authors' group discussions. Following the IM protocol, change objectives were identified using the procedure just described, with a 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 (to date) underused, especially those competences related to coaching patients, their relatives and their employers in a change process with RTW as the focus and improvement of QoL as the final goal. The professional actions of the occupational therapist



**Fig. 2** Phases of IM reasoning from QoL to determinants. Asterisks not influenced by the intervention; bold patient perspective; underlined perspective of 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 collaborate closely 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 relationship as such, but need to be set up together with the other stakeholders involved to ensure a continuum of RTW support (see Table 2).

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 agreed on beforehand by the stakeholders); assessing scope, limitations and workload of the job together with occupational hazards that could occur due to patient's functional limitations.

Islam et al. [73] 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. 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 programme.

Coole et al. [41] identified that in people with musculoskeletal disorders necessary communication between occupational therapists and employers is influenced by a number of factors, including those outside the therapist's control. In their role as case managers, occupational therapists should ensure that 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 Organising Model of Practice for RTW in BC patients (Fig. 1) was used when implementing the results of formative research and an additional international literature search in the group discussions aimed at implementing step 3 of the IM approach [4, 5, 19, 37, 38]. Since the OM not only indicates determinants of change but also provides suggestions on how to achieve change, it was used as a starting point for selecting methods. This is essential since OT-enabling skills and

strategies are complex [74]. 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 [74]. 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 who aim ultimately to improve the occupational performance and engagement of their patients [74].

### 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 [44, 75, 76]. 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 different validated and reliable 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, 73, 77].

### Strategies and Practical Applications

An OT intervention can add specific expertise to the current care programme, combining medical and technical/ergonomic information, since this is at the heart of OT [33, 78, 79]. Strategies used by occupational therapists are usually placed in two major categories: top-down and bottom-up [74]. The rationale behind top-down strategies is that participation can be improved by the 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 patient's 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 [74]. Curtin indicates six different strategies that are commonly employed by occupational therapists: remediation, compensation, education, community development, transformation, and redistributive justice [74]. 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 [74]. In the IM-based intervention that this paper presents, those strategies are an inclusive part of OT professionalism and therefore not repeatedly mentioned.

**Table 1** Patient-oriented performance objectives and change objectives

Breast cancer patient's perspective		Change objectives		
Performance objectives	Determinants	Patient behaviour	Occupational therapist behaviour in therapeutic relationship	
Evaluate current (functional) situation Define therapeutic goals Define perception on work-life balance	<i>Illness-related</i> Physical recovery	Assimilate information from caregivers	Inspect medical records of patient	
		Enhance awareness of abilities	Determine rehabilitation needs (roles, values, habits, ...)	
		Enhance acceptance of disabilities	Facilitate tailor-made goal-setting (shared decision-making)	
	Psychological recovery	Change disability cognitions	Provide tailor-made information to the patient (including answering questions)	
		Collaborate in goal-setting (work-life balance/QoL)	Evaluate effect of patient's habits on functional aspects and perceived QoL	
	<i>Personal-related</i> Performance capacity (self-efficacy)	Reflect on job and being at work (patient's perspectives)	Provide support in shared decision-making process	
		Question caregivers on relevant issues	Provide documented advice on goal-setting	
	<i>Work-related</i> Occupational identity	Define roles and habits	Report to multidisciplinary team	
		Make informed choices (shared decision-making)	Determine scope and limitations on functional level (ability assessment)	
	Occupational competence	Decide on goal-setting (work-life balance/QoL)	Provide tailor-made rehabilitation programme	
		Evaluate importance of other roles in life (at home...)	Participate in multidisciplinary teamwork	
	Occupational adaptation	Occupational adaptation	Discuss allocation of tasks connected to those roles (who does what, when, how)	
			Participate in goal-setting (work/life balance and QoL)	
			Describe and discuss task allocation	
			Participate in ability assessment	
			Collaborate in screening disabilities	
			Be an active participant in vocational oriented therapy	
			Reflect on (temporal) results	
			Share reflections with multidisciplinary team	
Participate, consisting of vocational rehabilitation programme				
Ask for repeated and/or additional information (if necessary)				
Define goal-setting regarding work	<i>Illness-related</i> Recovery (overall)	Enhance awareness of abilities	Provide tailor-made information to the patient (including answering questions)	
		Create acceptance of functional scope and limitations	Set up tailor-made training to enhance work-related abilities	
Train/enhance abilities regarding work	<i>Personal-related</i> Performance capacity	Decide on goal-setting (work-life balance/QoL)	1.1.1. Set up communication with employer and other relevant stakeholders (social security, ...)	
		Reflect on matching own abilities with requirements of the job	1.1.2. Participate in multidisciplinary team	
	Attitude towards work	<i>Work-related</i> Occupational identity	Identify patient's attitude towards "being at work"	Make inventory of patient's habits regarding being at work
			Enhance awareness of functional scope and limitations	Discuss alternatives with the patient
	Occupational competence	Occupational competence	Execute training programme (changing methods, using technical aids...)	Provide training programme
			Train in assertiveness	Report to multidisciplinary team
			Train in ability to ask for assistance	Compare abilities to work-load (work hardening and work conditioning)
			Recognise and respect need for rest (recovery)	Evaluate comparison abilities and requirements of the job
			Train in recovery-possibilities	Detect discrepancies
			Explore and respect functional limitations	Translate discrepancies into goal-setting for training programme
			Identify workability	Set up tailor-made training programme
			Execute tailor-made training programme (rehabilitation)	Relate goal-setting and programme content to treatment/rehabilitation programme
Evaluate training results			Assist patient in setting goals on assertiveness, self-efficacy, ....	
			Provide tailor-made training programme (cfr multidisciplinary team)	
	Assist/support patient in consistent use of training results			

**Table 2** occupational therapist oriented performance objectives and change objectives

Occupational therapist’s perspective Objectives (behavioural)	Change objectives			
	Illness-related	Personal-related	Work-related	Environmental factors
Provide early OT programme (focus on participation)	Inspect medical records of patient Determine scope and limitations/abilities Determine rehabilitation needs Provide tailor-made training programme/rehabilitation	Define patient’s needs Describe patient 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 geographical situation regarding transport to work Make inventory of opinion of relevant others
Execute evaluation of workload, working environment, Organisation and working 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 and stakeholders involved	Communicate with relevant stakeholders Organise stakeholder meetings and/or communication between stakeholders		
Implement case-management strategies	Make stepwise use of case-management method	Participate actively in case management Evaluate results and propose programme adaptations if necessary		

Using the MOHO subsystems (volition, habituation, mind-brain-body performance and personal and external factors) as a framework, Tables 4, 5, 6 and 7 present specific methods and strategies that 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.

Step 4. Developing programme 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 [75] will be used as a structure for the development of the programme components and materials, paying special attention to the role of the employer regarding RTW of the BC patient/worker [14, 41, 62, 63,

71]. This is the formal part of the RTW programme where the patient gradually leaves the patient role behind and focusses on being at work, as 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 the patient’s opinions, perceptions and to evaluate the current situation of the patient [43]. 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



**Table 3** Performance objectives and change objectives in environmental factors

Performance objectives (environmental)	Determinants	Change objectives
<i>Environment</i>		
Set up inventory of job requirements	<i>Illness-related</i>	Participate in work place visit
Assess workload/occupational hazards	Occupational health risks	Execute job analysis
Define differences between abilities and requirements	Coping	Define motivated choices (also if changes are necessary)
Early detection of need in RTW by patient	Physical and psychological side effects	Work performance
Collaboration of caregivers and occupational health at workplace	<i>Personal-related</i>	Advice and/or assistance with adaptations of the job content, work environment and/or organisation
Explore opportunities for fitting requirements to abilities	Work motivation	Scope and limitations of the job (occupational health risks/hazards)
Set up/enhance RTW system in workplace	Coping	Discuss attitudes towards 'being at work' from patient and colleagues
	Occupational identification	Task allocation (who does what, when, how...)
	<i>Work-related</i>	Work organisation
	Type of work and workload	Check requirements of duties at home and in social life
	Support (care givers, social environment, colleagues, ...)	Information on relevant issues
Follow-up when patient is on duty	<i>Illness-related</i>	Build self-understanding/self-esteem
Decide on regular evaluation (what moments, who involved...)	Physical and psychological side effects	Follow-up (sustainability)
Organise overall support (incl. additional external conditions e.g., transport to work, use of equipment...)	Care available	Retention
	<i>Personal-related</i>	Sustainable work performance
	Work motivation	Overall work load (physical, mental, psychosocial...)
	Occupational identification	Aligning abilities and requirements
	Coping	Check feasibility of combining job and other life aspects
	<i>Work-related</i>	
	Occupational adaptation possible?	
	(Lack of) understanding from work environment	
Evaluate additional conditions	<i>Work-related</i>	Work organisation
	(Lack of) understanding from work environment	Organisation of other roles in life
		Assessing job evolution/changes
		Organise transport to work
		Manage fatigue
		Train in assertiveness
		Evaluation of occupational physician and prevention consultant
		Vocational conditions
		Relevant legislation is applicable?
		Point of view/acceptance of patient's situation by relevant others
		Transport to work
		Check consequences (financial, social insurance...)

simulations, physical capacity evaluation or functional capacity evaluations; (3) assessment of the workplace, including interviews with managers and/or supervisors to determine the employee's understanding of the RTW intervention, to confirm the nature of the patient's 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 [75]. Job analysis provides detailed information on the tasks and skills involved,

**Table 4** Methods and strategies used by patient and occupational therapist to realise changes in volition subsystem

Performance objectives (behavioural)	Patient behaviour (change objective)	Methods	Occupational therapist behaviour (change objective)	Methods
<i>Volition (personal causation, values, interests)</i>				
Evaluate current (functional) situation	Assimilate information from caregivers	‘Consciousness-raising’	Inspect medical records of patient	(Good OT practice)
Define therapeutic goals	Enhance awareness of (dis-)abilities	Framing	Determine rehabilitation needs (roles, values, habits, ...)	Elaboration
Define perception on work-life balance	Enhance acceptance of (dis-)abilities	Participative problem solving	Tailor-made goal-setting (shared decision-making)	Framing
	Adapt disability cognitions	Goal-setting	Provide tailor-made information to the patient (including answering questions)	Modelling
	Goal-setting (work-life balance/QoL)	Shared decision-making	Use OT model to set up comprehensive action plan (focus on restoring participation)	Shared decision-making
	Reflect on job (patient’s perspectives)	Self re-evaluation		Goal-setting
	Question caregivers on relevant issues	Environmental evaluation		Enhancing network linkages
Define goal-setting regarding work	Enhance awareness of abilities	Personalising risk	Provide tailor-made information to the patient (including answering questions)	Technical assistance
Train/enhance abilities regarding work	Create acceptance of functional scope and limitations	Scenario-based risk	Set up tailor-made training to enhance work-related abilities	Participative problem-solving
	Decide on goal-setting (work-life balance/QoL)	Modelling	Connect to employer and other relevant stakeholders (soc. sec., ...)	
	Reflect on matching own abilities and requirements of the job	Elaboration	Participate in md team	

what the worker has to do, why it must be done and how it 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 use of their professional skills as a basis for their professional reasoning and to thereby connect their findings to those of the MDT [76, 80]. Reasoning helps the occupational therapist to identify barriers and, where possible, strategies to minimise those barriers. This professional reasoning is not an isolated process but is performed in each phase of the intervention [76, 80].
- 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-centred occupational therapy practice [81, 82]. Using the outcomes of professional reasoning, the occupational therapist tries to predict the likely long-term goals and programme-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—where

relevant—organisations that fund 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 achieve sustainable RTW, the occupational therapist and the patient must communicate (regarding legal and professional rules) with employers and other stakeholders on a legislative level (e.g., social insurance provider) [41]. The intervention plan as described is broken down into separate steps and the included short-term goals, combined in tailored short-term programmes. With the occupational therapist as case manager, the patient/worker and relevant stakeholders then collaborate to realise the short-term goals step by step, aiming ultimately at the long-term goals (see phase 3). Enhancing work performance and safety within existing tasks can be a specific short-term goal of a programme part of the intervention that can be realised 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 programme in which the actions, timeframe and tasks are well reasoned, and which provides the means to

**Table 5** Methods and strategies used by patient and occupational therapist to realise changes in habituation subsystem

Objectives (behavioural)	Patient behaviour (change objectives)	Methods	Occupational therapist behaviour (change objectives)	Methods
<i>Habituation (roles, habits)</i>				
Evaluate current (functional) situation	Define roles and habits	Elaboration	Question habits and reasons for their existence in patients behaviour	Elaboration
Define therapeutic goals	Make informed choices (shared decision-making)	Tailoring	Assist patient in discovering functional alternatives	Framing
Define perception on work-life balance	Decide on goal-setting (work-life balance/ QoL)	Individualisation	Provide advice and support for choices on change of patient habits	Goal-setting
		Shared decision-making	Offer programme to train in alternative methods (e.g., energy management; ...)	Shared decision-making
		Goal-setting	Provide advice on alternatives for material used	Enhancing network linkages
		Participative problem-solving	Offer programme for coping with loss and differences in life, in line with other MDT professionals	Public commitment
		'Consciousness-raising'	Evaluate effect of patient's habits on functional aspects and perceived QoL	Tailoring
		Framing	Provide support in shared decision-making process	Individualisation
		Modelling	Provide documented advice on goal-setting	Counselling
		Persuasive communication	Report to MDT	
Define goal-setting regarding work	Patient's attitude towards 'being at work'		Discuss with patient choices regarding work	
Train/enhance abilities regarding work	Vocational rehabilitation		Offer programme to enable patient to train in work-related abilities (e.g., assertiveness, energy management, ...)	
	Awareness of functional scope and limitations		Set up a progressive RTW procedure	
	Training (changing methods, using technical aids...)		Evaluate progress and barriers in RTW	
			Provide advice on RTW process continuation	
			Inventory patient's habits regarding 'being at work'	
			Discuss alternatives with the patient	
			Provide training programme	
			Report to MDT	

help the worker resume tasks that fit the patient's abilities as closely as possible; (2) eventual modification of the environment, tasks, tools or equipment that can be necessary in order to enhance the fit between the worker and the work; (3) education or training, preferably incorporated in programme 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, the programme 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 programme steps in the intervention to ensure that the latter are tailor-made.

Adjustments may be made to goals or programme items following unexpected events such as surgery, physical or psychological illness, changes in the organisation on the employer's 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.

## Discussion

So far there is little evidence that the implementation of OT supports BC patients' (labour-)participation [83, 84]. 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 [85]. 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

**Table 6** Methods and strategies used by patient and occupational therapist to realise changes in mind-brain-body performance subsystem

Objectives (behavioural)	Patient behaviour	Methods	Occupational therapist’s behaviour	Methods
<i>Mind-brain-body performance (physical, psychological, mental skills)</i>				
Evaluate current (functional) situation	Participate in ability assessment	Self re-evaluation	Determine scope and limitations on functional level (ability assessment)	Guided practice
	Collaborate in screening disabilities	Personalise risk	Provide tailor-made rehabilitation programme	Verbal persuasion
Define therapeutic goals	Be an active participant in vocational-oriented therapy	Self-affirmation tasks	Participate in multi-disciplinary teamwork	Goal-setting
Define perception on work-life balance	Reflect on (temporal) results	‘Consciousness-raising’		Planning coping responses
	Share reflections with MDT	Framing		Set tasks on a gradient of differences
	Participate consistently in vocational rehabilitation programme	Modelling		Elaboration
	Ask for repeated and/or additional information (if necessary)	Elaboration		Shared decision-making
Define goal-setting regarding work	Explore and respect functional limitations	Individualisation	Determine work abilities	Framing
		Planning coping responses	Assist patient in defining work-related choices	Modelling
Train/enhance abilities regarding work	Workability	Set tasks and a gradient	Detect work requirements	Ergonomic analysis
	Work hardening and work conditioning	Tailoring	Offer programme on enhancing abilities regarding requirements	Psychosocial analysis
	Adaptation in work environment and/or organisation		Support patient to reflect on occupational identity, competences and adaptation	Individualisation
				Participatory problem solving
				‘Consciousness-raising’
				Self re-evaluation
				Environmental re-evaluation

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 implementation of the RTW process, including continuous evaluation and adjustments of goals and actions.

In order to be successful, the RTW intervention must take into account certain conditions and specific risks.

**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 of the medical and functional rehabilitation of those patients. The goal-setting of those rehabilitation efforts should consist of tailor-made support programmes and make use of case management [86]. All stakeholders that are part of the RTW process of an individual BC patient should work together to achieve the agreed goals, with the goal-setting of the BC patient as a starting point, and respecting any legislation in force.

Occupational therapists are not only part of the therapeutic setting of the patient (in care and rehabilitation), they are also part of the (occupational health)team that collaborates in the workplace to follow up evolutions and assist in setting up adequate solutions to achieve a healthy and safe RTW, respecting specific workplace hazards. By doing so, occupational therapists are helping the BC patients to bridge the gap between healthcare and workplace.

**Risks**

Although OT literature unanimously advocates the close involvement and commitment of patients in setting up an RTW process, the results of other research indicate possible risks in such an approach. Tiedtke et al. [14, 15] warned of expectations that are not properly discussed between stakeholders, leaving both patient and employer with unexpressed concerns and thereby resulting in potentially unrealised reintegration. Disappointment and disengagement of patients and other stakeholders can occur when activation strategies are too strict: when they exclude rather than include people [87]. Maiwald [88] found that the

**Table 7** Methods and strategies used by patient and occupational therapist to realise changes in personal life situation (external factors and personal factors)

Objectives (behavioural)	Patient behaviour	Methods	Occupational therapist's behaviour	Methods
<i>Mind-brain-body performance (physical, psychological, mental skills)</i>				
Evaluate current (functional) situation	Participate in ability assessment Collaborate in screening disabilities	Self re-evaluation Personalise risk	Determine scope and limitations on functional level (ability assessment) Provide tailor-made rehabilitation programme	Guided practice Verbal persuasion Goal-setting
Define therapeutic goals	Be an active participant in vocational-oriented therapy	Self-affirmation tasks	Participate in multi-disciplinary teamwork	Planning coping responses
Define perception on work-life balance	Reflect on (temporal) results Share reflections with MDT Participate consistently in vocational rehabilitation programme Ask for repeated and/or additional information (if necessary)	'Consciousness-raising' Framing Modelling Elaboration Individualisation Planning coping responses		Set tasks on a gradient of differences Elaboration Shared decision-making Framing Modelling
Define goal-setting regarding work	Explore and respect functional limitations	Set tasks and a gradient	Determine work abilities Assist patient in defining work-related choices	Ergonomic analysis Psychosocial analysis
Train/enhance abilities regarding work	Explore workability Organise work hardening and work conditioning Explore adaptation in work-environment and/or organisation	Tailoring	Detect work requirements Offer programme on enhancing abilities regarding requirements Support patient to reflect on occupational identity, competences and adaptation	Individualisation Participatory problem solving 'Consciousness-raising' Self re-evaluation Environmental re-evaluation

opposite of what was mentioned could occur when there is a lack of management involvement (sometimes caused by a dearth of legislation) and flexibility of stakeholders together with a lack of concrete guidelines regarding stakeholders' responsibilities (particularly the healthcare and re-integration professionals).

Based on conditions and risks indicated by research, occupational therapists guiding RTW should be aware of (1) the great 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 play as participant (from the care side) and coach (from the workplace side) in bridging the gap between the two sides of the BC patient's reality regarding RTW.

Therefore, the OT intervention developed in this study should be evaluated in field research, aiming at building an understanding of best—evidence-based—practice for OT assistance in maintaining and/or restoring the participation of BC patients. Additionally, this could contribute to a change in Belgian social insurance policy by making an inventory of the possible individual and societal effects of enhanced RTW in BC patients.

## Conclusions

IM was found to be a useful method with which to develop a specific OT-oriented RTW intervention aimed at bridging the gap between healthcare and the workplace identifying OT as facilitators. The IM-based intervention allows all stakeholders in the RTW process for BC patients to collaborate in order to respect a step-by-step process that takes every stakeholder's issues into account and that aims to reach the goals that have been agreed upon. Focusing on maintaining or restoring labour participation, this process can help BC patients to restore QoL as they move from being a patient to becoming a survivor.

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## Compliance with Ethical Standards

**Conflict of interest** No competing interests.

**Ethics Statement** For the development of the intervention, no personal data of participants or patients were collected. The article is based on the literature. Consequently, no approval was required from an ethical committee.

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