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RESEARCH ARTICLE

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

Background: Women of working age who are diagnosed with breast cancer often experience a decline in their ability to work during and after treatment. A hospital-based tailored intervention is needed to restore their labour participation by bridging the gap between the healthcare setting and the workplace. The aim of this intervention is to restore the labour participation and, guided by an occupational therapist, to enhance the quality of life of BC patients during their return-to-work process. This paper mainly focusses on describing that intervention, including the research protocol to evaluate its feasibility and participant's perceptions.

Materials and Methods: The development of the BRIDGE intervention has yielded a roadmap that describes the individual patient's path to return to work and includes tools for professionals. The Template for Intervention Description and Replication (TIDieR) guidelines were used to systematically describe the intervention. A feasibility study – designed as mimic RCT - was used as protocol for this study.

Results: prepared by a phase 0 (indication phase), the five phases of the intervention are as follows: exploration; comparison; preparation; goal-setting and action planning; realisation and evaluation. An overview of the procedures involved, including the stakeholders in each phase and the materials to be used, is also presented. Results of the mimic RCT are currently analysed and prepared for publication.

Conclusions: This five-phase BRIDGE intervention is performed by an OT and targets patients in paid work who have been diagnosed with BC. It aims to bridge the gap between the healthcare setting and the workplace.

Keywords: return to work intervention, hospital-based, breast cancer, occupational therapy

Introduction

Many women of working age who are diagnosed with breast cancer (BC) deal with a decline in their ability to work during and after treatment. This leads to (temporary) changes in work status, work schedules, work hours, and wages [1,2].

Patients feel uncertain about their ability to work (or lack thereof), which contributes to feelings of vulnerability, anxiety and insecurity [3-5]. BC patients, their healthcare providers, and their employers often lack knowledge about return to work (RTW) support [6,7]. Consequently, patients perceive a gap between the care provided within the hospital and the support provided by their employer, which can lead to disappointment, fragmentation of care, and job loss even after returning to work. For breast cancer (BC) patients under 65, work contributes significantly to their Quality of Life (QoL) [8-10]. Today, BC is often a treatable or manageable disease. However, consequences of disease and treatment can cause chronicity that could hinder their (labour-)participation and thereby affects their quality of life (QoL) [11-17]. More than 40 % of BC survivors do not succeed in resuming work [12,18-22]. For the other 60 %, maintaining labour participation remains far from easy and may lead to job-loss [23-27]. Pauwels et al underpin BC patients' needs for support regarding RTW and indicate that, following patients' and caregivers opinions, those needs are insufficiently met [22].

A successful RTW process requires the involvement of many stakeholders, which must be coordinated [28]. International research confirms that a patient's need for RTW support should be addressed and integrated into healthcare services as early as possible in the treatment process [29-36]. Early support provided as a part of psychosocial care within a hospital setting is beneficial, especially when administered early and tailored to an individual BC patient's needs [32,37,38]. Indeed, the existing literature often provides information on RTW interventions that is limited to a superficial description of the intervention content, which otherwise remains a 'black box' to practitioners. The guidelines outlined in this paper will contribute to remove this [39].

Although the development of the BRIDGE intervention using the intervention mapping protocol (IM) was published by Désiron et al. [40], a full description of the BRIDGE intervention itself has not yet been published; this hampers understanding of the intervention and its transferability to other settings.

Aiming to answer the research question "*What should be the specific content and approach for an OT intervention guiding a RTW-trajectory for BC patients in Belgium (FL)?*", this paper describes the content of the intervention and the protocol for a mimic RCT combined with qualitative effect evaluation and process evaluation of BRIDGE.

A 'mimic RCT' consists of a small-sized, underpowered RCT but meets all the other criteria of a full RCT and is recommended to identify key parameters to perform a feasibility study and for the design of a full RCT [41]. The results will thus not only provide elements for a full RCT but also improve healthcare based RTW-intervention for a vulnerable patient group in need of RTW-support [15,42-45].

Being able to (return to) work appears to improve the quality of life of BC patients [14,17,46-48]. The BRIDGE-intervention is a stakeholder-inclusive and hospital based RTW-intervention to provide early and tailored support for BC patients and thereby contribute to BC patients' quality of life. The IM protocol, which consists of six steps, is (as explained briefly here-below) used to guide the development of theory-based and evidence-based health promotion programmes [49].

1) *Needs assessment*: after combining the results of a literature search with the findings of formative research [47,50-55], the authors listed the psychosocial needs of BC patients regarding RTW.

2) *Defining performance and change objectives based upon scientific analyses of health problems and problem-causing factors:* to explore the results of a literature search using IM guidelines, results of two focus group discussions were supplemented with literature on the use of IM in other target groups and/or problem settings.

3) *Selecting theory-based intervention methods and practical applications to change (determinants of) health-related behaviour*: We identified theoretical methods that can influence changes in determinants, after which these methods were linked to the change objectives and translated into practical applications using the sources discussed above.

4) *Producing programme components*: Design and production of the programme.

This paper put focus on description of the content of the BRIDGE intervention and the materials developed to provide the intended service.

Methods and Materials

As part of a PhD study [20], the IM protocol was systematically applied during the development of an RTW intervention for BC patients, emphasising the needs of these patients while also taking

healthcare providers' concerns into account in the first step [40].

The BRIDGE intervention is developed for women with a BC diagnosis (regardless of type, stage or treatment) and is planned to be offered to BC patients from the first month of diagnosis and treatment onwards, in line with scientific findings that stress the importance of an early start for RTW support [32,37,38]. In- and exclusion criteria are presented in table 1.

Table 1: in- an exclusion criterion

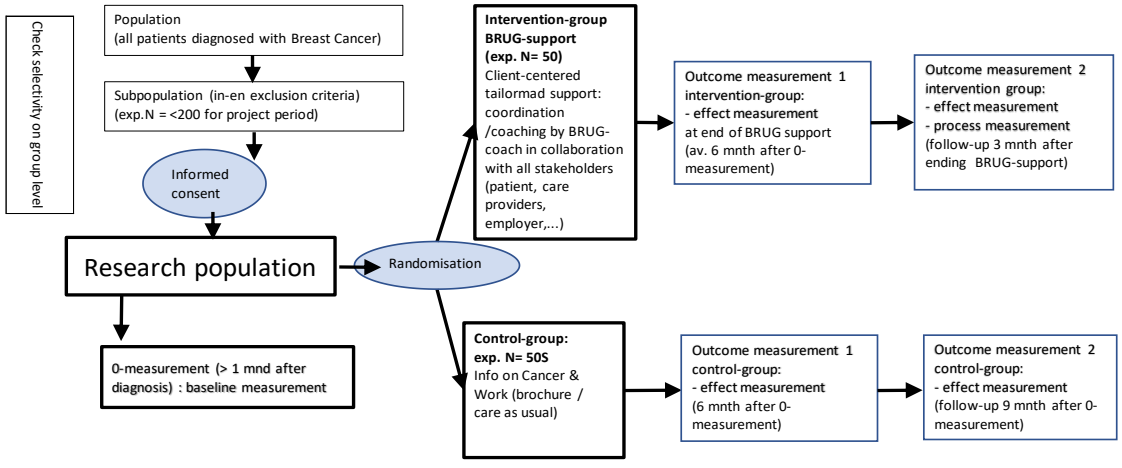
Inclusion criteria	Exclusion criteria
1. being diagnosed for BC (regardless of type, stadium or treatment) at working age 2. being legally entitled to work for at least 5 years; 3. being employed at date of diagnosis (temporary or fixed contract, full-time or part time engagement) 4. having read, understood and signed the informed consent form.	1. being self-employed (due to the large differences in legal situation compared to salaried workers); 2. expected survival < 1 year; 3. unemployed at the moment of diagnosis 4. not able to work for other reasons than BC on the moment of diagnosis

To avoid potential bias in the subsequent research, men with BC were not included due to differences in the status of men and women in the course of the process to regain the labour market [56]. Self-employed patients were also excluded due to the significant differences in their legal situation compared to salaried workers. Other exclusion criteria were patients with expected survival of less than one year and BC patients who were on sick leave and unable to work for reasons unrelated to BC at time of diagnosis.

Using the hereby presented protocol (see figure 1) the BRIDGE intervention was applied in two hospitals in Belgium (one regional hospital (RH) and one academic university hospital (AH), aiming to assess:

1) The feasibility of the RCT
2) The process of performing the intervention from patient and healthcare worker perspective which will provide insight whether or not the content of the intervention needs to be modified
3) The impact on primary outcomes such as RTW and QoL
4) The qualitative evaluation of the intervention effect by patients

Figure 1: Design of mimic RCT



Intervention group

Using the "BRIDGE roadmap"(developed for this project), support for the intervention-group is offered by the BRIDGE case-manager following the five phases of the BRIDGE-intervention that will be described further-on.

Control group

Control group participants receive care as usual (CAU) offered by the oncological teams at both hospitals,

In-patients with questions regarding their work, can – if they want – connect to the breast care

nurse, social worker or specialised psychologist. At RH, CAU means that a brochure is offered in which general information is provided for all oncological patients. At AH, CAU includes a motivation interview in which information on work related issues is provided.

Using 'purposive sampling', 10 participants of each group will be invited to participate in interviews following the research planning by a trained interviewer (see figure 1). Selection for the intervention group is made by the BRIDGE case-manager, aiming to include patients with different medical conditions, age, personal and professional backgrounds, type op contract, and type of work. For the control group, data of the hospital files will be used to select people of different professional backgrounds, age, medical situation and family situation. For patients who might experience distress for this type of conversation, the patients' possibilities to engage in this type of interview will be conclusive.

The intervention-group participants will be questioned on their process-perceptions (see table 2) and on the content and approach of the BRIDGE case-manager regarding the guidance of that process.

The healthcare workers involved in the oncological team participate in a focus-group (n = 4). The time-use of the BRIDGE case-manager and the other healthcare workers of the onco-team is registered by using time-writing (excel spread sheet) to enable a clear insight of the feasibility of their efforts, necessary to deliver the BRIDGE-intervention.

Data collection

Quantitative data collection

The indication instruments consist of questions regarding 1) the intention of the BC patients to continue working during treatment, 2) their intention to return to work after treatment, 3) their expectations work (e.g. return to work without any problem, their perceived ability to cope with problems if they would occur, the presence of professional support regarding RTW, social support regarding RTW) and 4) the patients' estimation on their current workability

Primary quantitative outcomes regarding the patient's situation are

- RTW, measured as the moment of returning to work [20]
- Days of sick leave will be measured by recording self-reported information since hospital files nor files of social security provide this data [46,57-59].

This paper also describes the content and accompanying tools of the BRIDGE intervention, which is to be delivered by an occupational therapist (OT) who is integrated into the oncology team in the hospital and who will be referred to hereinafter as the BRIDGE case manager (BCM). Prior research suggests that an OT is qualified to take on the role of case manager in guiding the RTW process for BC patients [28,60,61], based on their understanding of the complex and dynamic relationships between the patient, their environment, and their occupation, along with their ability to navigate physical, social, and cognitive supports and barriers to facilitate successful performance [62]. Other stakeholders that can take part in the individual patient's trajectory to regain labour participation can be a very large number of people, both linked to the patients personal situation (e. g. partner, parent, children, friends, …) to the health care service (e.g.; medical staff, paramedical staff, psychologist, social worker, administrative collaborator,…); to the workplace (e.g. Human resource manager, supervisor, production planner, team leader, colleague,…), and to the social a/o private insurance providers (e.g.; medical advisor, social services, account manager,…).

For the BRIDGE intervention, a 'phase 0' (indication phase) was set up to enable this RTW intervention to be selectively offered to the specific BC patients who require it. The indication form (developed for this purpose, see appendix) aims to target the BRIDGE intervention at eligible patients who are in need for support and – by doing so – avoid patients would feel forced to accept service they are not ready for. Equally important, the phase 0 aims to empower BC patients who are considering engaging in the RTW process by themselves.

The development of the BRIDGE intervention resulted in the creation of specific material (see table 2) that enables the BCM to coordinate the BC patient's pathway to work in a structured and well-determined manner [32,63-66]. A range of different materials were developed to facilitate collaboration between the BC patient, the BCM (coordinator of the RTW-trajectory), the healthcare professionals, and the other stakeholders.

Table 2: Specific BRIDGE intervention tools, the phase they are used in, and their purpose

Tool and phase in which it is used	Purpose
Indication form (phase 0)	To assist BC patients and the BCM in clarifying whether or not the individual BC patient needs RTW-focused support
BRIDGE roadmap (all five phases)	To document the content and results of each part of the intervention
Patient logbook (all five phases)	To enable efficient communication; the logbook contains stakeholders' contact information and provides space for notes that might support patients experiencing memory loss in taking certain action when agreements are reached (e.g. additional information to be requested by specific stakeholders)
BCM logbook (all five phases)	To keep a record of the evolution of the RTW process and facilitate adequate coordination of this process

The main tool is a roadmap that – for each phase – keeps record of the steps to be followed on an individual patient's pathway to RTW: the content of the actions, a list of assessment instruments, suggested goals, and necessary stakeholders.

In addition to the BRIDGE roadmap, a patient logbook and a logbook for the BRIDGE professional who guides the intervention as case manager were also developed. All documents discussed above are written in Dutch and available by mail upon request to the main author.

The 12 items of the TIDieR guidelines [39,67] were used to present a schematic overview of the BRIDGE intervention. As table 3 shows, we added a 13th item to these guidelines to enable the clear indication of the specific population for whom this intervention has been developed: female breast cancer patients on a trajectory to retain or regain their labour participation.

Table 3: Template for Intervention Description and Replication Checklist (TIDieR)

Item number	Item	Where located Primary paper
1.	**BRIEF NAME** Provide the name or a phrase that describes the intervention.	Introduction Description of the BRIDGE intervention
2.	**WHY** Describe any rationale, theory or goal of the elements essential to the intervention.	Introduction
3.	**WHAT** **Materials**: Describe any physical or informational materials used in the intervention, including those provided to participants or used in intervention delivery or in training of intervention providers. Provide information on where the materials can be accessed	Materials and methods
4.	**Procedures**: Describe each of the procedures, activities and/or processes used in the intervention, including any enabling or support activities.	Procedure of the BRIDGE intervention
5.	**WHO PROVIDED** For each category of intervention provider (e.g. psychologist, nursing assistant), describe their expertise, background and any specific training given.	Introduction
6.	**HOW** Describe the modes of delivery (e.g. face-to-face or by some other mechanism, such as internet or telephone) of the intervention and whether it was provided individually or in a group.	Procedure of the BRIDGE intervention
7.	**WHERE**	Procedure of the BRIDGE intervention

	Describe the type(s) of location(s) where the intervention occurred, including any necessary infrastructure or relevant features.	
8.	**WHEN and HOW MUCH** Describe the number of times the intervention was delivered and over what period of time, including the number of sessions, their schedule, and their duration, intensity or dose.	Procedure of the BRIDGE intervention
9.	**TAILORING** If the intervention was planned to be personalised, titrated or adapted, then describe what, why, when and how.	Description of the BRIDGE intervention Procedure of the BRIDGE intervention
10.	**MODIFICATIONS** If the intervention was modified during the course of the study, describe the changes (what, why, when and how).	Not applicable
	HOW WELL	
11.	**Planned**: If intervention adherence or fidelity was assessed, describe how and by whom, and if any strategies were used to maintain or improve fidelity, describe them.	Not applicable
12.	**Actual**: If intervention adherence or fidelity was assessed, describe the extent to which the intervention was delivered as planned.	Not applicable
13.	**TARGET GROUP** Indication of the patients that are eligible tot the intervention	Description of the BRIDGE intervention

Results

As mentioned earlier, this paper focuses strictly on the description of the intervention, as its goal is to present the content of the BRIDGE intervention to those who study this area of healthcare (hospital-based support of RTW for BC patients). At date, evaluation results are prepared for publication in the near future.

The BRIDGE intervention itself contains five phases that will be described with reference to – for each phase – the content of the intervention [32], the procedure (including stakeholders in each phase), and the materials to be used during the RTW process. The materials (see table 2) and the description of the BRIDGE intervention are available (in Dutch) upon request by sending an email to the first author.

Description of the BRIDGE intervention

In phase 0, the patient's needs and expectations are registered, facilitating to clarify for each patient if there is an indication for additional support by BRIDGE or not. The contact that leads to filling in the indication form (see appendix) can be initiated by the patient, by one of the members of the oncology team, or by the BCM, and is directly related to the inclusion and exclusion criteria. Patients who do not meet the inclusion criteria are referred to the MDT oncology team consults for care as usual.

The topics addressed in the indication form are intended to prompt the patient to reflect on how she perceives her situation and, on her opinions, and expectations regarding RTW. The consultation by the BCM that forms part of phase 0 will lead to the patient making a final decision as to whether or not she wants to embark upon the BRIDGE intervention. After considering the input offered by the BCM during this consult, the patient might opt to create an RTW process on her own or look for other ways to realise her work-oriented goals. In specific individual situations (for example, a patient who deems it inappropriate for her employer to know the reason for her sick leave), an individual might opt not to make use of the support of the BCM as suggested in the BRIDGE intervention.

Apart from phase 0, the BRIDGE intervention consists of five phases (Figure 1), coordinated by the BCM (who has been integrated into the oncology team as stipulated by the intervention [32]). Throughout the entire trajectory, each step is meant to lead to progress; however (as indicated by the arrows on the side of the diagram), the BRIDGE intervention also takes into account that changes in medical and/or personal circumstances can lead to reconsideration. Moreover, changes in rules and legal regulations or changes at the workplace also can lead to the review of prior decisions and to taking one (or more) step(s) back in the RTW process.

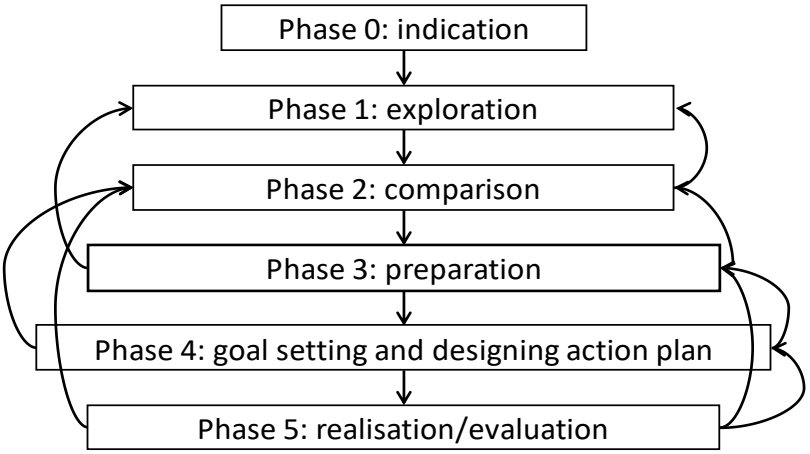


Figure 1. Schematic overview of the RTW intervention

The way in which the BRIDGE intervention is delivered in a tailored approach, is subject to agreements between the patient and the BCM. The BCM may travel to the patient's home, or to another place where the patient feels comfortable; they may also agree to meet online and/or by telephone, depending on the patient's needs and choices. Duration of such a tailored RTW trajectory as a whole is estimated to be (on average) six months. In our further study researching the feasibility and results of the BRIDGE intervention (which will be reported in a later paper), the details recorded by the BCM regarding each patient's trajectory will provide more specific information.

The implemented assessment instruments (questionnaires, screenings, etc.) are not included in this paper (due to space restrictions), some of them are specific to the Belgian situation, as they are linked to Belgian legislation, while others are protected because they are on purchase.

Before we provide a more detailed explanation of each of the five phases, Table 4 presents an overview of the aims of each phase and the assessment instruments that the BCM can implement to clarify certain issues regarding the patient's situation that can contribute to achieving these aims. The results of these assessments will be noted in the BCM's logbook, as well as in the patient's logbook when additional questions need to be asked of specific stakeholders.

Table 4. Overview of the aims and indicated assessment instruments during each phase (based on OT literature and occupational health and wellbeing)

Phase	Aims	Assessment instruments based on OT literature	Assessment instruments based on occupational health and wellbeing
0: indication	• Indication of the needs of the patient • Ensuring that the intervention is offered to patients in need • Empowering patients	/	/
1: exploration	• Inventory of stakeholders • Obtaining a clear view of the patient's situation	Worker Role Inventory (WRI) [68,69] Borg Scale for Rating of Perceived Exertion (RPE) [70]	Need For Recovery (NFR) [71]
2: comparison	• Overview of the results of the OT reasoning, with indication of discrepancies and matches between abilities and work requirements	WRI [68,69] Work Environment Impact Scale (WEIS) [72]	Quick Exposure Checklist (QEC) [75] NFR [71] Déparis Risk Analysis [76] Checklist Synergy [77]

	• Identifying potential barriers and opportunities	Integration von Menschen mit Behinderungen in die Arbeidswelt[1] (IMBA) [73,74]	
3: preparation	• Determining the RTW goals • Developing propositions of the RTW actions	IMBA [73,74]	/
4: goal setting / designing action plan	• Setting up an action plan, agreed to by all stakeholders	IMBA [73,74]	/
5 realisation / evauation	• Continuing the RTW process as agreed upon in phase 4 • Completing the RTW process and continuing the patient's engagement with work	RPE [70]	QEC [75] NFR [71]

In each of the five phases, the BRIDGE intervention focuses on specifically tailoring the RTW process to the individual BC patient's situation. The stakeholders in the hospital context, in addition to the patient and the patient's relevant others, are the oncology team, BCM, general practitioner (GP), and employer, among other relevant stakeholders. Stakeholders in the workplace who can participate in the RTW support are the employer (represented by the occupational physician, the Human Resources manager, supervisors, team leaders, colleagues, social workers, etc.). Stakeholders in the legal context can be the physician or social security provider, the social worker attached to the patient's sickness fund, or other support providers (such as patient organisations). Which of those stakeholders is included in what phase, and for what reasons, will depend on the specific patient context and vary across both the phases and any changes in the individual patient's situation.

Phase 1 (exploration) comprises the assessment of personal and environmental factors in the patient's life that impact (re-)employment: these will include, among others, diagnostic and prognostic information and the physical, cognitive, psychosocial, and environmental demands of the workplace. The BCM, healthcare providers, and the employer are directly and actively involved in the RTW process. To obtain a clear insight into the BC patient's (dis)abilities, results of assessments (see table 3), a project-specific logbook, and the input of different oncology team members (such as physicians, nurses, physiotherapists, psychologists, etc.) are included in the intervention. Phase 1 concludes with a clear description of the opportunities, barriers, and viewpoints discerned from the exploration of the patient's functional situation (including their personal and social situation), the patient's administrative situation (for example, availability of sickness benefits), and the input of other stakeholders regarding relevant issues in the workplace.

During **phase 2** (comparison), the BCM uses OT reasoning skills to identify matches, mismatches, and/or differences between the viewpoints of the BC patient, the employer, and the requirements of the patient's usual employment. In this way, the BCM is able to identify issues that can contribute to an understanding of the patient's situation and whether or not a match can be found between the patient's abilities and work requirements. Furthermore, the BCM identifies barriers that might hinder the RTW process and, where possible, develops strategies to minimise those barriers. Based on the results of specific assessment instruments (see table 3), this phase ends with a clear overview of potential barriers and possible solutions, as well as opportunities and ways to strengthen the patient's abilities, diminish long term effects of requirements, and attune abilities and requirements to each other.

The goal of the following phase (**phase 3**: preparation) is to clearly ascertain what is needed for the BC patient to prepare herself to be ready to return to her professional activities. The focus in this phase is on the patient's 'readiness to return to work' and what she needs to feel ready to begin actually 'getting back to work' [78].

[1] In English: Integration of people with disabilities into the workplace

In cases where a rehabilitation programme aimed at regaining work-specific abilities would be beneficial, the BCM can consult the multidisciplinary oncology team. Moreover, the BCM can engage in shared decision-making to assist the BC patient in clearly identifying goals that the patient want to set for herself [79]. In this phase, the BCM supports the BC patient to elaborate goals that – in the next phase - will be used to guide her decisions in planning her own RTW process, and thereby increase her abilities to return to work. In phase 3 the patient is supported in finding out what she wants, what seems feasible to her (including medical advices) and link that to the viewpoint of other stakeholders. Phase 3 ends with a clear agreement on work-oriented goals that the patient wants to achieve and the ways in which healthcare providers (and other stakeholders such as relevant others, social security collaborators on the administrative level, etc.) can contribute to their achievement. Suggestions are also made regarding the actions required to achieve those goals, including the timeframe that is to be respected.

Phase 4 (goal-setting and designing an action plan) is intended to support the patient in establishing the short- and long-term goals of the RTW process regarding the agreements that need to be made with the employer. Techniques such as shared decision-making [79] are implemented by the BCM, who supports the BC patient to connect with her employer and/or other stakeholders. This may include the following: setting up a patient-specific programme in which the actions, timeframe and tasks to be achieved in the workplace are discussed in detail and agreed upon by the stakeholders; discussing the resources necessary to assist the patient to return to performing tasks that match with her abilities, along with the potential modification of the environment and tasks or the provision of additional aids, tools or equipment; and the provision of additional education or (workplace) training to ensure that the patient/worker learns the skills needed to undertake new tasks, use new equipment correctly, and work safely in the adapted environment. This phase ends with a clear and concrete action plan on how 'getting back to work' will be organised in practice and that is agreed upon by all stakeholders, including agreements on dates, timetables, task-oriented actions, and people involved in relation to (established and/or evolving) goals that are defined during this phase.

During **phase 5** (realisation/evaluation), the programme described in phase 4 will be executed step by step. To ensure a tailor-made approach, the BCM monitors earlier goals and programme steps in the intervention and might propose that these be revised. At the end of phase 5, the RTW process is completed with the agreement of the patient and the other stakeholders. During the RTW trajectory, these goals may evolve as the patient's situation changes. Therefore, this does not necessarily mean that the BC patient will return to the job she had before her illness. Ending the RTW process requires that all people involved agree that the targets – as set at the beginning, and/or as they have evolved during the trajectory – have been sufficiently met.

Procedure of the BRIDGE intervention

In line with the recommendations in literature [32,33,80], the BRIDGE intervention is intended to commence in the first month after diagnosis.

The intervention is flexible. To reduce feelings of anxiety, and to avoid transport difficulties for the BC patients, the BCM will contact them for an intake, which can take place in any setting (at the patient's home, in the hospital, etc.). This enables the programme to be tailored to the patient's treatment and side effects. Additional meetings are organised depending on the patient's needs, her preferences, and/or necessity, as identified throughout the BRIDGE intervention process. If events in the patient's life mean that postponement of the RTW process is necessary, a follow-up can be organised by phone or email on a monthly basis, depending on what is most suitable for the patient. If patients have any questions, they can contact the BCM by email and/or phone.

During the first meeting, the BRIDGE intervention procedures should be discussed, and the use of the patient's logbook explained. From that moment on, tailored actions based on the five-phase setting of the BRIDGE intervention are established in agreement with the patient, depending on her health status, treatment plans and relevant aspects of her work. While respecting the patient's perspective, the input of other stakeholders and changes in the patient's personal and medical situation are also considered. As a consequence of this evidence- and practice-based choice, the timing of actions will be determined based on the BCM's expertise regarding both the patient and her workplace situation.

During the RTW process, other stakeholders are contacted by the BCM (after gaining the patient's consent). The patient can also establish contacts herself in cooperation with the BCM, who thereby attempts to empower the patient to become the manager of their own RTW trajectory. Meetings with the employer and/or other

stakeholders take place at the BC patient's workplace; meetings with social security representatives are usually held at their offices.

After the intake, and once agreements on collaboration between BC patients and the BCM have been established, patients are invited for assessment of specific aspects of their work ability, which takes place over one or more sessions.

The support delivered by this tailored BRIDGE intervention is intended to match the patient's needs and the evolution of the RTW process. This means that there is no predefined number of appointments. Table 5 provides a summary of the efforts made by the BCM during the implementation of the intervention (18 months), along with the average time-use for each type of action.

Table 5: Time-use of BCM per type of action

Time-use per type of action	**Minimum – maximum**
Number of contacts	Min 2 – max 10
Type of contact	
- Telephone	- Min 5 – max 15
- E-mail	- Min 8 – max 20
- Home visit	- Min 1 – max 5
- Meetings (employer, social security, etc.)	- Min 0 – max 2
Time-use per contact (in minutes)	
- Telephone	- Min 5 – max 30
- E-mail	- Min 2 – max 10
- Home visit	- Min 45 – max 150
- Meetings (employer, social security, etc.)	- Min 30 – max 180
Time-use per participant (in hours)	Min 8 – max 24
Time of the intervention from start until end (in months)	Min 2 – max 24

In some cases, one face-to-face meeting is enough to realise phase 1; in others, more needs to be done to develop a tailored approach that fits the patient's specific situation. Phases 2, 3, and 4 can include several meetings between the BC patient and the BCM, depending on the phase's content. Meetings will preferably be held in the patient's home or a place she prefers, in order to ensure the patient's comfort. Phone calls (to follow up and to provide support) are used for short informative contacts and take approximately 15 minutes; however, these can last longer if necessary. Email exchanges will also differ between patients in terms of their number, content and ways in which information is provided, including correspondence with other stakeholders. Following up with the evolution in the last phase is agreed upon by the relevant stakeholders; here, the aim is to respond to any changes in the BC patient's situation. Evaluation and follow-up in phase 5 (on average) will require a time commitment from the relevant stakeholders of 90 minutes at most.

Tailoring takes place in each phase, but particularly in phase 4, and is based on the patient's preferences, her medical trajectory, the results of the assessment, and the impact on the patient's life. It also refers to the meeting places, the type of communication, and the support provided. As a consequence, and based on the assessment results, goal-setting and shared decision-making are integrated into the process at different times to assure a close fit between the patient's aspirations and the realities of the other systems involved (healthcare, social security, workplace, etc.).

Discussion

Recognition at a societal level of the necessity of RTW support is an important prerequisite for success in regaining labour participation that is now being increasingly recognised in Belgium [81] and in other countries [82]. This support includes not only focusing on BC patients' needs but also informing healthcare workers of workplace-related rules and regulations that impact patients' opportunities to return to their professional activities (e.g., labour-related legislation, rules on occupational health and wellbeing, etc.). Therefore, the BRIDGE intervention has a strong focus on integrating all stakeholders from the outset to avoid misunderstandings due to lack of knowledge on the part of healthcare staff and occupational personnel regarding the specific rules, possibilities, and barriers pertaining to each stakeholder's situation [20].

The 'mimic RCT' design for this study allowed us to test all aspects of the design and facilitates development of a large observational

study with multiple outcome measures. The mimic RCT enabled to evaluate the BRIDGE intervention regarding recruitment procedure, randomisation, participation in the process of the intervention (feasibility of the research) and acquired insight into the potential effects of the intervention [64,65,83,84]. It allowed to investigate the conditions under which further research (in form of a full RCT) should be developed. Sanson et al. found that the limitations of RCTs for evaluating population-based interventions are related to both methodology and pragmatic concerns, including population availability, contamination, time for follow-up, external validity, cost, ethics and informed consent, and the inhibition of innovative research questions [63].

As the literature indicates that both employees and employers feel unsure during the RTW process [35,85-87], the BRIDGE intervention provides professional support to ensure continuity in the RTW process, as the BCM can be contacted by all stakeholders in the event of any doubt, uncertainty, or change of situation.

In line with the literature, the BRIDGE intervention targets BC patients in need of RTW support [6,86-93] and aims to tailor the content of each phase to every individual BC patient's personal and professional reality [6,32].

Although labour participation in the OT context typically refers to all types of labour, including combinations of housekeeping, voluntary work, being an employee, and being self-employed, the BRIDGE intervention focuses on BC patients who wish to return to their pre-diagnosis status as an employee (whether engaged by the same employer or not). In future research, it will be necessary to consider patients whose medical situations (e.g. other types of cancer) or job status (e.g. self-employed) differ from the group targeted during the initial development of the BRIDGE intervention. The existing literature clarifies that all cancer survivors of working age need integrated support from health and vocational professionals to maintain and return to work after their cancer diagnosis and treatment [81,94,95], and that such support should be provided during the recovery and rehabilitation process [33].

Even though the targeting of patients requiring support and the tailored nature of the BRIDGE approach are perceived as advantageous, they can also limit the standardisation of the intervention and thus its (cost-)efficiency. Furthermore, this five-phase approach can be time-consuming due to the tailored nature of the intervention. Future research should thus also discern the minimum time commitment required from professionals and thus the minimum budget.

Occupational therapists, with their vocational rehabilitation knowledge and responsive practice philosophy, are well positioned to provide the abovementioned work-related support in the context of cancer survivorship [96]. As healthcare professionals, OTs can legally access both medical and workplace-linked information, collaborate with the MDT regarding specific additional therapeutic efforts, and implement the obtained information in their role as RTW co-ordinator [40]. Knott et al. found that 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 [97]. 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 [98].

While the setting up of the BRIDGE intervention is based on specific OT skills when focusing on RTW support, this does not imply that only OTs are suitable candidates for delivering this service[99-105]. The literature indicates that other members of the multidisciplinary teams and/or other stakeholders may possess the skills required to guide the RTW process [20, 69].

One limitation of the current BRIDGE intervention design might be that it is not suitable for hospitals with a lack of specialised healthcare providers. There is a dearth of research-based, systematic knowledge regarding what specific aspects of OT contribute to the results of the RTW interventions, their effects on sustainable work resumption, and their contribution to enhancing BC patients' quality of life. Other RTW programmes that also aim to support RTW in BC patients exhibit certain similarities and certain differences when compared to the BRIDGE intervention [33,35,38,106-108]. Remarkably, many publications that discuss the development and/or effects of RTW interventions rarely offer information focused on the elaborated intervention protocols. Combined with the difficulty of accessing research results, this lack of concrete information on how an intervention is to be implemented and what tools are to be used hinders the implementation of these research results in healthcare practice [109]. Evaluation of the feasibility of the intervention and the process evaluation setup in preparation for a large-scale RCT is still ongoing as this paper is submitted. Steps 5 (planning for programme adaptation, implementation, and sustainability) and 6 (planning for evaluation) that

refer to evaluation of results of implementation (- as mentioned in IM - are not discussed here; these will be explored in a subsequent paper (in preparation).

The BRIDGE intervention parallels the structure of RTW interventions developed in other countries and for cancer diagnosis in general [33,38,106-108]: clarifying the patient's situation, abilities and limits, and providing support for goal-setting; investigating the workplace reality, workload, and specific occupational hazards that might influence the chances of RTW success; comparing both previously mentioned findings and providing targeted and tailored advice to resolve potential discrepancies; setting up an RTW plan that respects the patient's abilities and choices while also taking into account the socioeconomic context and workplace reality; and guiding the RTW process and, where necessary, identifying circumstances that might arise during the RTW process period, suggesting adjustments to facilitate the process [33,35,38,106-108]. Stergiou-Kita et al. provided suggestions for strategies to facilitate RTW, but do not describe a systematic approach to implementing those elements into RTW support as the BRIDGE roadmap does [110].

Woods et al. present a Work Plan [107,111] that acts as both a guide for BC survivors who aim to return to work and an intervention manual for the staff. The Work Plan consists of a four-week guided workbook-based intervention containing structured sections and activities to provide guidance and support to patients [107]. Participants are prompted to create a personal RTW plan using all elements from the workbook. Similar to the BRIDGE intervention roadmap, the Work Plan offers structured sections that focus on eliciting specific thoughts and beliefs, identifying targets and actions, and adopting concrete steps to achieve goals, all of which are used to create a personal RTW plan. Use of the Work Plan was shown to yield positive results for patients coping with RTW following cancer treatment [112]. Participating patients described the workbook as a useful tool that facilitated the RTW planning process. The exercises within the workbook 'were appreciated as they broke the process down into small bits' [112]. An intervention manual has also been developed for use by the researchers during delivery of the intervention. These findings support our strategy to provide guidelines for the BCM, including a logbook for the patient. Notably, unlike the Work Plan, the BRIDGE intervention also provides for the presence and availability of a contactable case manager.

The template developed by Amin, Stergiou-Kita, and Jones [113] informs the cancer survivor and the employer about what can be done to improve the chances of success in RTW, but lacks guidance for managing the continuity of the process, although a planning tool is included. To the best of our knowledge, the results of the use of this template have not yet been published.

Conclusions

This five-phase BRIDGE intervention, which was developed as an evidence-based intervention and should be performed by an OT/BCM, aims to bridge the gap between the healthcare setting and the workplace early in the patient's recovery process. The supporting materials consist of a patient logbook, a BRIDGE professional logbook, and a five-phase BRIDGE intervention roadmap.

The mimic RCT with a qualitative evaluation study assesses the feasibility of the research and provides understanding of how to improve the intervention's content. It enables a first trial to test an intervention that connects evidence-based knowledge of the BRIDGE-intervention to real-life of daily care for BC patients. It also aims to integrate 'work" as an obvious outcome parameter of healthcare. Results will be used to improve the evaluation design and the intervention.

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Appendix: Indicational form

By filling in this form, the patient is invited to question herself on her viewpoints regarding RTW.
In the form handed over to the patient, numbers are not printed in the last three columns.
These numbers are meant to enable the BCM to come to a conclusion that will be discussed during an informative consult between the BCM and the patient. This consult will lead to a decision as to whether or not the BRIDGE intervention will commence.

		Yes	Doubt	No
1	I would like to stay at work as much as possible / resume as soon as possible.	2	1	0
2	I know what to do and who to turn to if I want to stay at work / resume.	0	1	2
3	In the short term, I can get back to work at work without any problems.	0	1	2
4	In my work there are elements that are (too) stressful to be able to continue / resume.	2	1	0
5	My work is difficult to adapt to my abilities.	2	1	0
6	I need support to keep doing/resuming my work.	2	1	0
7	I can call on support in maintaining work / resumption of work (e.g. health insurance…).	0	1	2
8	At my work, support is provided for people who are struggling with disability.	0	1	2
	Score per column	…	…	…
Total score		…/16		

Interpretation of the results:

- A score of 0 indicates that the patient considers herself capable of maintaining / resuming work on her own.
- Total score equal to or higher than 8/16: there are clearly expected problems with the reintegration, and offering support (BRIDGE guidance) is on the agenda.
- If the category "doubt" scores higher than 6/8, starting BRIDGE is recommended.
- If the score is lower than 8/16, the results should be discussed during consultation with the oncology team in order to reach a decision about offering BRIDGE guidance. This allows an account to be taken of any strong weighting of one element (e.g. risk of overload, etc.)