Author's response to reviews

Title: Occupational therapy and return to work: a literature review

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Author's response to reviews: see over
Dear Editor

We thank you for the opportunity to re-submit our manuscript “Title: Occupational therapy and return to work: a systematic literature review” (Manuscript ID: 9920098855209937). We also are grateful to the reviewers for their valuable comments. In this document we will answer to their comments.

Firstly, we rigorously checked the editorial instructions you send us, altering the title of the article from “Occupational therapy and return to work: a literature review” to “Occupational therapy and return to work: a systematic literature review”. This check-up also resulted in a correction on the reference list, using Reference Manager 12 (format “Bio-med central”, as indicated in the authors’ instructions).

Next, we carefully took notice of the remarks from both reviewers. With great respect of their input, we hereby try to answer these remarks, indicating the way we altered – where necessary – the text of the article. In order to work in a systematic way, we cite the input of both reviewers, adding (text in blue) our comment and/or altered/additional text.

Finally, this cover letter contains some additional corrections.

Response to comment of the reviewers:

Reviewer 1: James Hill

Reviewer’s report:

Reading the title of the manuscript, I anticipated the difficulties of the authors as both RTW and rehabilitation interventions lack standardization – which greatly limits our ability to integrate the literature. (see Whyte J. A grand unified theory of rehabilitation (we wish!). Archives Phys Med Rehabil 2208; 89:203-209; Hensing G, Alexanderson K, Allebeck P, Bjurulf P. How to measure sickness absence? Literature review and suggestion of five basic measures”. Scand J Soc Med. 1998; 26:133–144; Hensing G. Methodological aspects in sickness-absence research. Scand J Public Health. 2004; 32:44–48.). That being said, there are several areas where I believe the authors are over-stating their findings. I will highlight the Lambeek et al study as it is one of the six studies from which the authors draw their conclusions and the article is cited 11 separate times by the authors.

Indeed, we agree with the reviewer that the problem he defines was an issue that was indeed troublesome for us. Some of the cited studies can indeed be questioned on their methodological strength. However, in this – rather new developing - area of research no other methodologically sound studies with more could be found while using the combination of search terms on “OT” AND “RTW” was used. We decided to include these studies as a contribution to the necessary work that – as the reviewer correctly indicates – surely needs more grounding. The remarks of the reviewer on this issue were taking into account in the reviewed article.

- to page 5, the following paragraph was added:

   Especially for patients who suffer from problems that not only endanger their (labor-) participation while the rehabilitation process is on-going, but who risk being limited on
longer terms (because of permanent limitation of chronic problems), OT is assumed to be a relevant part of the whole rehabilitation program [1]. Since no evidence was found on behalf of breast-cancer survivors (specific population in which the researchers at first took interest), it was decided to enlarge the focus on RTW and OT for all patients confronted with long term effects of diagnose/treatment, including problems on RTW.

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

To page 17 the following paragraph was added:

In literature, occupational therapists report many challenges in adopting and implementing evidence-based principles to practice. According to Lee and Kielhofner, research indicates that current OT practice is still not strongly grounded in theory, occupation and evidence [2]. They state that, although occupational therapists provide a range of work-related interventions, specific evidence related to OT in the area of vocational rehabilitation remains somewhat limited [2]. Lee and Kielhofner found that published works tend to focus on issues of scholarship rather than implications for practice, thereby often limiting the practical implementation of the findings into OT practice. Nevertheless, Lee and Kielhofner also state that experiences (in projects in which occupational therapists are involved) indicate that simultaneous consideration of theory and evidence is advantageous to achieve occupation-focused best practice [2].

In the Lambeek study – the randomization compared usual care to a workplace intervention, where the medical team involved the employee’s supervisor (or use the term employer) in both identifying the barriers and coming up with solutions. The fact that an occupational therapist was part of the team was serendipitous; in fact, average patient contact for providers was the same for the occupational medicine physician and the occupational therapist with approximately 17 sessions with the physical therapist. The involvement of the employee’s workplace, a cornerstone of successful RTW, is the intervention, not the OTI. I do not mean to minimize the value of occupational therapy to the rehabilitation process but my fear is that your broad searching strategy has excluded several areas of specialization for occupational therapists that may have some reasonable occupational data: hand/burn rehabilitation (OT is a vital part of burn rehabilitation for splint manufacturing, contracture prevention, and mobilization of scar, particularly in the hand) and blind/visually impaired rehabilitation. If you state that occupational therapy has a major role to play in return to
work, how can there be almost zero literature on the topic? The conclusion that multidisciplinary care benefits the rehab population may be warranted but I do not see how you can separate out the OT component from the other disciplines

The reviewer highlights the shortcomings in the domain of OT-research, thereby agreeing with other (OT-) researchers like Lee & Kielhofner, Kinébanian & Le Granze, cited at page 15, 16, 17 and 19 in the text.

The reviewer indicates a regrettable shortcoming in professional literature in our field. Not only do we sympathize with him on that matter, but we also try to assist in overcoming this lack of scientific work by delivering this review. In the literature, there is a lot of descriptive and narrative material, but that type of research results was not considered in this review as evidence with enough power, since this systematic review is part of a research project aiming on a RCT on OT and RTW.

With this review and the research we anticipate (partly based on this review’s findings) and we want to contribute to filling the gap the reviewer is – correctly – pointing at. Far too long, OT’s have focused on practice “in the field”, without publishing practical- or research results on their work. As – following the evolution the input of the WFOT - in more and more countries, not only bachelor-level research is done, but OT’s are participating in research on master of PhD level, one can expect that more research (both qualitative and quantitative) will be published.

The reviewer stated earlier that research publications which clearly and unambiguously separate the effect of the OTI from the results of the work of the whole team, is scarce. Nevertheless, the work of Schene et al. on behalf of RTW for people suffering from depression shows that this type of research (when rigorously designed and carried out) can make this distinction.

In the systematic search we carried out, the aim was to identify studies in which OT was involved, trying to find indication for further research. Except for the study of Schene et al. (2006) no other publication could be found in which OT was separately measurable. This not only confirms the earlier statement of the reviewer, but also indicates the need for a (relatively young) profession like OT to clarify the effects that OTI can have in strengthening the work of the team and delivering benefit for patients on specific issues (function, activity and participation) in lives domains like self-care, leisure and productivity.

• These elements led to add the following paragraph at “discussion” on page 20:

As this systematic review is set up as a part of a research project, aiming on a RCT on OT and RTW, we also try to assist in overcoming the indicated shortcomings. Far too long, occupational therapists have focused on practice “in the field”, without publishing practical- or research results on their work. As – following the evolution the input of the WFOT - in more and more countries, not only bachelor-level research is done, but Occupational therapists are participating in research on master of PhD level, one can expect that more research (both qualitative and quantitative) will be published.

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

If you are using inpatient rehabilitation centers in the US, in order to maintain accreditation the disciplines of physical therapy, occupational therapy, speech language pathology, and rehabilitation nursing must all be represented – so all inpatient rehab studies that included a RTW outcomes may be OTIs.

In the description of the design of the Lambeek study (2010), the authors randomized patients to usual care group and an integrated care group. In the additional information, provided on www.bmj.com they documented with high level of detail the intervention. Regarding this very detailed information, and the information on page 4 of the article on what therapists were involved in “usual care” (Physiotherapy, manual therapy, Cesar therapy, medical specialist care and psychological care) we agree with the reviewer that emphasis was put on RTW, but we concluded that – even though it is indeed not possible to differentiate in therapeutic effects of the input of team-members – OT was only involved in the integrated care team. This was also based on the fact that in the “integrated care protocol” (provided additionally by the BMJ website), the occupational therapist flow-chart included the work intervention process, indicating that was the task of the OT to carry out that part of the integrated care protocol.

At best, this paper serves to highlight the anachronous term Occupational Therapy as it applies to the workplace – the authors note that Vocational Rehab has taken over this role. Given the problems defining rehabilitation interventions, as well as the difficulty with return to work outcomes, there is probably no answer to the authors’ hope to define effectiveness of Occupational Therapy Interventions by RTW. I believe that this point adds value to the literature, I am not sure that a paper framed as a comprehensive review of the literature drives the point home.

In Europe, the term Occupational therapy is used to indicate a profession that aims “… to promote, develop, restore and maintain abilities needed to cope with daily activities to prevent dysfunction. Programs are designed to facilitate maximum use of function to meet demands of the person’s working, social, personal and domestic environment…” (see page 3)

From that point of view, vocational rehabilitation is one of the methods that can be put to use by OT on behalf of reaching the patients goals when RTW and/or regaining productivity (in a more large meaning) is at stake. In practice, vocational rehabilitation is realized by a partnership between the patient and all the rehab-team members, including OT.

- To clarify this, we added the following paragraph to page 5, hereby combining review remarks by both reviewers:

From that point of view, vocational rehabilitation is one of the methods that can be put to use by OT on behalf of reaching the patients goals when RTW and/or regaining
productivity (in a more large meaning) is at stake. In practice, vocational rehabilitation is realized through a partnership between the patient and all the rehab-team members, including OT.

In an integrated rehabilitation team, a multi-disciplinary intervention is covered by different team members, all collaborating with the patient to reach the same goals. In therapeutic practice it is important that each of the disciplines involved, can support efficacy when being involved in the rehab team (what would it otherwise be there for?). When carrying out this systematic review, we aimed at finding that evidence on behalf of OT (as part of the team), so it could be used to found another RCT upon, aiming on OT for breast cancer survivors and their need for support on RTW. We agree with the reviewer this evidence was not found, making the effort that needs to be done to found the RCT project upon, more challenging.

Anticipating the difficulties we encountered in this systematic review, the reviewer indicates correctly the problems we had to overcome, which are mentioned on page 16 (paragraph 2 & 3), page 18 (paragraph 2 & 3) and page 19 (paragraph 2 & 5)

Reviewer 2: Marian Arbesman

Reviewer’s report:
Minor essential revisions
1. It is PsycInfo, not PsychInfo
   We checked the whole text and replaced the term on page 2 and 6
2. P. 9 focused not focused (first paragraph) (also on p. 15 in first full paragraph)
   Checking grammar indication first, we corrected the text not only on the indicated pages but also elsewhere so a consequent use of the term was provided. The word focused, for instance, was consequently altered to focussed by using the soft-ware tool of MS Word. The same was done for the word “proramme” that was – by using sioft ware – to progam.
3. P. 10 heading “Outcome measures en definition of return to work” – please Correct
   Correction was made to “Outcome measures and definition of return to work”.
4. P. 15 – first line “targeting on RTW” should read “targeting RTW”. Also, line 8 – “As result” should read “as a result”.
   Correction was made both on line 1 “targeting RTW” and on line 8 “as a result”.

On page 17 we corrected:
Still, the scientific evidence on which these OTIs would be based, can only – for strong evidence – be retrieved from two studies.
Nevertheless, the scientific evidence on which these OTIs would be based, can only – to ensure solid evidence – be retrieved from two studies.

and

Another drawback is that the simultaneous addition of other interventions, such as care management and physical therapy (graded activity) [18], clogged the precise effect of the OTI.

Simultaneous addition of other interventions on the other hand, such as care management and physical therapy (graded activity) [18], clog the precise effect of the OTI

5. On reference list, incorrect reference for #2 – it is 2010 volume 17, 177-190
The error was corrected on the field in Reference manager and corrected where the reference was used in the text.

Discretionary revisions
1. There is no definition of “return to work” or “vocational rehabilitation” in the background section. A short definition would be helpful.

On page 4, we added a description of the term “vocational rehabilitation” and an indication to the content of the term “return to work”:
Following Holmes, rehabilitation must focus on identifying and overcoming the health, personal/psychological, and social/occupational obstacles to recovery and (return to) work from this point of view, vocational rehabilitation reflects a wide variety of interventions, including meaningful occupations through voluntary work, sheltered work, supported employment and open employment opportunities [1]. As a therapeutic intervention, return to work includes that patients are assisted by their (occupational) therapists to regain access to the type of work they were occupied in before therapy was started.

2. P.4 – Paragraph starting “According to Lee and Kielhofner…” While this is valuable information, it seems to be out of place in the background section. It would be better suited to the discussion section. Either move the paragraph or develop a clearer transition.
We agreed with the reviewer and decided to move the text to the discussion area (page 17 of the reviewed text):
In literature, occupational therapists report many challenges in adopting and implementing evidence-based principles to practice. According to Lee and Kielhofner, research indicates that current OT practice is still not strongly grounded in theory, occupation and evidence [2]. They state that, although occupational therapists provide a range of work-related interventions, specific evidence related to OT in the area of vocational rehabilitation remains somewhat limited [2]. Lee and Kielhofner found that published works tend to focus on issues of scholarship rather than implications for practice, thereby often limiting the practical implementation of the findings into OT practice. Nevertheless, Lee and Kielhofner also state that
experiences (of some authors of projects in which occupational therapists are involved) indicate that simultaneous consideration of theory and evidence is advantageous to achieve occupation-focuses best practice [2].

We refer to corrections following the input of the first reviewer.

3. P.13 Paragraph on Vanderploeg article – the way it is written is a bit confusing – clarification would be helpful

In the reviewed text (on page 14), this section was altered:
Vanderploeg et al. [14] mention that the OT was part of the multi-disciplinary team, but do not give further details on the content of the input of OT. The additionally provided information [25] gives more specific information on the research protocol; however no specification of the precise content of the occupational therapy part of the program was indicated.

4. P. 14 – Paragraph starting “Only an experienced occupational therapist…” is very confusing – please clarify.

In the reviewed text, this section (on page 15) was altered:
Recognizing the role that OT plays in the overall therapeutic effort (by using the WFOT definition of the profession [1]), is not obvious, but for experienced occupational therapists nevertheless very well indicatable. In the papers by Jousset [20], Joy [22], Sullivan [20] and Vanderploeg [16, 25]. This finding supports the statement of Lee and Kielhofner that specific evidence of OTIs is lacking [2].

5. The inclusion of depression as a category in RTW seems to work from a theoretical perspective. From a practical and clinical perspective (and this seems to be the goal from the conclusion), however, the jump seems to be quite large between the two categories of clients. It is recommended either that more be done in the methodology/background to describe the scope or to eliminate the depression article and clarify the population in the methodology/background.

We agree with this reflection made by the reviewer. Nevertheless, we decided, after discussion between authors, to maintain the article in the selection.

At the start of this research project, the aim was to find evidence for OT intervention on RTW for a specific population (breast cancer survivors). As we noticed that our search did lead to few results, and that these results were of descriptive and narrative origin, we decided to alter the strategy to the search presented in this article. The focus of the systematic review was put on RTW as part of OT interventions, regardless of the category of patients this OTI was offered to. This reasoning, combined to the remarks of the reviewer, we altered the text on:

- Page 4 (Background):
  Especially for patients who suffer from symptoms that not only endanger their (labor-) participation while the rehabilitation process is ongoing, but who risk to be disabled on longer terms (because of permanent limitation of chronic problems), OT can be a relevant part of the whole rehabilitation program. Since no evidence was found on behalf of breast-cancer survivors (specific population in which the researchers at first
took interest), it was decided to enlarge the focus on RTW and OT for all patients confronted with long term effects of diagnose / treatment, including problems on RTW.

This review centralizes current evidence with regard to the added value of OT for patients aiming at return to work, regardless of the categories of patients to who this intervention was provided (RTW).

- **Page 7 (Methodology):**
  
  Figure 1 shows the selection process of articles for full-text analysis (n=26). Inclusion criteria were:
  
a) The studies had to be either randomized controlled trials (RCTs) or cohort studies and written in English;

b) The participants had to be patients of working age (18-65 years) that had participated in a rehabilitation program;

c) The OTI had to be a part of a multidisciplinary rehabilitation program aiming at RTW, regardless of the patient population the intervention was provided for.;

- **Page 10 (Results):**
  
  Six papers [4-9] finally met the quality criteria. These six studies included 899 patients older than 18 years (active age) that participated in rehabilitation programs aimed at RTW. All studies included patients – suffering from differing problems - who had jobs at the time of the research project in which they participated and patients were supported by social security system and/or private insurances.

- **Page 16 (Discussion):**
  
  Since a large variety of interventions, with different patient-populations were performed by the occupational therapists of these programs used in the studies, it was difficult to compare - and thereby generalize - the results of these studies. In order to do so, both uniform terminology and specific, detailed descriptions of the therapeutic content of the OTIs would be needed.

**Additional corrections:**

- Page 2 and 6: to refer in a more correct way, we altered Pubmed to Medline (Pubmed).
- at page 2, we altered the abstract section:

  **Background**

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

  **Methods**

  A systematic literature review of peer-reviewed papers was conducted using electronic databases (Cinahl, Cochrane Library, Ebsco, Medline (Pubmed), and PsycInfo). The search focussed on randomised controlled trials and cohort studies published in English from 1980 until September 2010. Scientific validity of the studies was assessed.
Results
Starting from 1532 papers with pertinent titles, six studies met the quality criteria. Results show systematic reviewing OTIs on RTW was challenging due to varying populations, different outcome measures, and poor descriptions of methodology. There is evidence that OTIs as part of rehabilitation programmes increase RTW rates, but the methodological evidence of most studies is weak.

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

To:

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

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

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

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

page 3 we altered:
Assisting patients to return to their job is clearly an important part of the therapeutic effort of occupational therapists [2], the OT process is based on initial and repeated assessments in individual patients. Assessment includes the use of standardised procedures, interviews, observations in a variety of settings and consultation with significant people in the person’s life. Functionality, the ability to perform activities in daily life, leisure and work and the possibility to participate in all aspects of life (including work) are part of the OT assessments. The results of these repeated assessments form the basis of the therapeutic program plan, including short- and long-term aims of treatment. This plan must be relevant to the person’s developmental stage, habits, roles, life-style preferences and the person’s environment.

To:

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

- at page 6 we altered
  The patient population/problem (P), intervention (I), comparison (C), and outcome (O), or PICO technique, was used to find relevant information and to formulate relevant questions that best match the capabilities of database search engines. Using the PICO elements as guideline, focus of this review could be rigorously maintained on patients suffering from an injury or illness that causes temporary incapacity to work and on patients participating in rehabilitation programs including OT.

to:

The patient population/problem (P), intervention (I), comparison (C), and outcome (O), or PICO technique, was used to find relevant information and to formulate relevant questions that best match the capabilities of database search engines. Using the PICO elements as guideline, focus of this review could be rigorously maintained on patients suffering from an injury or illness that causes temporary incapacity to work and on patients participating in rehabilitation programs including OT.

- page 14 (paragraph 2):
  “The content of a therapeutic program item like “work hardening” is mentioned in the work by Joy et al., but is not clear what the therapeutic actions are, what type of approach is used, what activities are performed”
was altered to:

“The content of a therapeutic program item like “work hardening” is mentioned in the work by Joy et al., but is not clear what the therapeutic actions are, what type of approach is used, what activities are performed”
The content of a therapeutic program item like “work hardening” is mentioned in the work of Joy et al., but is not clear what the therapeutic actions are, what type of approach is used, what activities are performed.

- page 14 (paragraph 4):
The OT part of the program of Sullivan et al. contains “increasing activity involvement” was altered to:
The OT part of the program of Sullivan et al contains “increasing activity involvement”

- page 15, we altered:
Lambeek et al. [14] however, describe in the integrated care protocol precisely the contribution of each discipline in the multidisciplinary team, including a flow chart of the process in which each of those team members was involved.

to:

Lambeek et al. [16] however, describe precisely the contribution of each discipline in the multidisciplinary team, including a flow chart of the process in which each of those team members was involved in the integrated care protocol.

- page 19, a more correct way of referring was necessary:
Lee and Kielhofner [2] described and synthesized evidence about work-related OTIs the Model of Human Occupation (MOHO) needed to be altered to:
Kinébanian & Le Granze indicates that Lee and Kielhofner described and synthesised evidence about work-related OTIs the Model of Human Occupation (MOHO) [36].

Yours sincerely,
The authors