Professionals’ perceptions of factors affecting implementation and continuation of a physical activity promotion program in rehabilitation: a qualitative study

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*Journal of Rehabilitation Medicine* 2017; 49(5):385-394
Abstract

Objective
To describe professionals’ perceptions of factors that facilitate or hamper the implementation and continuation of a physical activity promotion program in rehabilitation.

Design
This study used a qualitative design.

Methods
Semi-structured interviews (n=22) were conducted with rehabilitation professionals (n=28) involved in the implementation of a physical activity promotion program. Two additional interviews were conducted with the program coordinators (n=2). The study involved 18 rehabilitation organizations implementing the program that targets people with disabilities or chronic diseases. Organizations were supported in the implementation process by the program coordinators.

Results
Commonly perceived facilitating factors were: involvement of committed and enthusiastic professionals; agreement with their organizations’ vision/wishes; the perceived additional value of the program; and opportunities to share knowledge and experience with professionals from other organizations. Commonly perceived hampering factors were: uncertainty about continuing the program; limited flexibility; and lack of support from physicians and therapists to implement the program.

Conclusions
Professionals perceived a heterogeneous set of factors that facilitate and/or hamper the implementation and continuation of a physical activity promotion program in rehabilitation. Based on these findings, recommendations were formulated to enhance embedding of physical activity promotion during and after rehabilitation.

Keywords
People with disabilities, active lifestyle, sports, sustainability, rehabilitation professionals, semi-structured interviews.
Introduction

In the Netherlands, sports activities are currently considered to be important components of effective rehabilitation care [1-3]. The embedding of sports into rehabilitation can play a role in promoting an active lifestyle in patients with disabilities. Unfortunately, research showed that the incorporation of sports during rehabilitation in itself was not enough to maintain an active lifestyle in all patients after discharge from rehabilitation [3]. Van der Ploeg et al. [3] showed the necessity to offer patients also a period of tailored counseling focusing on sports and daily physical activities after rehabilitation to attain a physically active lifestyle in their home setting. The results of this randomized control trial showed that self-reported physical activity levels of patients who received tailored physical activity counseling after rehabilitation, improved up to one year after discharge [3].

Following these previous and positive findings, the evidence-based program ‘Rehabilitation, Sports and Exercise’ (RSE) was introduced and prepared for dissemination in Dutch rehabilitation care [4]. The RSE program specifically targets people with physical disabilities and/or chronic diseases to encourage them to participate in sports and daily physical activities during and after rehabilitation [4,5].

However, the implementation of a new program into rehabilitation practice is challenging [6,7]. The continuation of a program over an extended period may be even more difficult [8-11]. Insights into factors at the level of the organization that influence these processes are important to understand how and why the program is (not) successfully implemented and continued over time [12,13]. Although many studies has been conducted on the identification of factors influencing the implementation of evidence-based programs in healthcare settings [14,15], less is known about enabling and constraining factors of the implementation and continuation of a physical activity promotion program (e.g. RSE program) in rehabilitation care.

Therefore, the aim of this qualitative study was to describe professionals’ perceptions of factors that facilitate or hamper the implementation and continuation of a physical activity promotion program in rehabilitation.
Methods

Study design
A qualitative design using semi-structured interviews with rehabilitation professionals was chosen to gain in-depth insights about factors influencing the implementation and continuation of a physical activity promotion program in different rehabilitation settings based on professionals’ experiences, attitudes and expectations. The study is part of the Rehabilitation, Sports and Active Lifestyle (ReSpAct) study [4,5]. The study protocol was approved by the ethics committee of the Center of Human Movement Sciences of the University Medical Center Groningen. All invited professionals agreed to participate and approved to use the collected data for scientific purposes.

Setting
Professionals of 12 rehabilitation centers and rehabilitation departments of 6 hospitals were involved. The RSE program was implemented in all 18 organizations with support of a Dutch organization1. Figure 4.1 illustrates the content of the RSE program. A detailed explanation of the RSE program has been described elsewhere [4,5].

The implementation of the program consisted of the following key steps:
- A structural embedding of sports and exercise during rehabilitation
- Setting up a Sports Counseling Center (SCC) to provide tailored (telephone-based) counseling after rehabilitation. All consultations at the SCC are based on motivational interviewing in order to realize a behavioral change regarding a physically active lifestyle at home.

Each participating organization appointed a project leader to coordinate the implementation of the program within the organization, and one or more counselors to execute the program [4,5]. Two national program coordinators were engaged to support and coordinate the implementation on a national level. Table 4.1 shows activities that were part of the implementation strategy.

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1 The name of this organization was ‘Stichting Onbeperkt Sportief’. This national organization aimed for a larger participation within disabled sports and physical activity and the development of suitable and accessible sports facilities. From January 2016, Stichting Onbeperkt Sportief became part of Knowledge Center for Sport Netherlands.
Facilitating and hampering factors

Table 4.1
Activities related to the implementation strategy

The implementation strategy included:
- Providing financial incentives to each organization (fixed amount of money)
- Regular visits by program coordinators depending on organization’s needs
- Providing advisory support by program coordinators
- Reviewing of project plans, annual plans and reports by program coordinators
- Organizing national and regional meetings for professionals
- Providing training courses in motivational interviewing to counselors
- Providing material for the implementation and executing of the RSE program

RSE = Rehabilitation, Sports and Exercise.

Data collection
From the involved organizations (n=18), all project leaders and a selection of counselors were invited to participate in a semi-structured interview by researcher FH. Counselors were selected to participate if they were actively involved in the implementation of the RSE program. Prior to each interview, professionals were informed about the content and aims of the interview. Furthermore, both national program coordinators were invited to participate in an interview about their experiences with disseminating the program and perceived influencing factors.
Interviews with project leaders were conducted using a topic list that was based on a theoretical framework [16]. This framework displays three main phases of an introduction process (adoption, implementation, continuation), categories of determinants (socio-political, organization, program, professional, patients) and the implementation strategy [16].

Each interview started with an open question about professionals’ general experiences with the RSE program. Thereafter, open questions were asked about their experiences with the implementation of the RSE program and potential factors that influenced this process. Probing questions were asked about the way the RSE program was implemented and executed in the concerning organization. Furthermore, specific questions were prepared about professionals’ experiences with activities that were part of the implementation strategy and initiated by program coordinators. Subsequently, project leaders and counselors were asked about their expectations on the continuation of the RSE program after program period (2012-2015) and possible influencing factors.

Appendix 4.1 sets out the content of the interviews. Prior to each interview, professionals received this diagram by e-mail to motivate them to think about perceived facilitators and barriers. Moreover, this diagram was used as a tool to guide the interview.

The content and topic list of the interviews with the two program coordinators differed from the interviews with the project leaders and counselors. During the first interview with the program coordinators, open questions were asked about their experiences with the implementation of the RSE program within each organization separately (n=18). A second interview was conducted in order to obtain information about program coordinators’ perceptions on facilitating and hampering factors to the implementation and continuation of the program in rehabilitation organizations.

**Data analyses**

All interviews were audiotaped and transcribed verbatim. To familiarize with the data, transcripts were read several times and a summary of each transcript was written. The first two transcripts were independently coded by FH and MvB using an open coding procedure [17]. Based on these two transcripts a code scheme including potential facilitating and hampering factors was developed. Consequently, all transcripts were coded using this coding scheme.
by researcher FH, involved in the evaluation of the RSE program, and a second coder (MvB, research assistant 1 or research assistant 2). Coding was performed in ATLAS.ti (Scientific Software Development GmbH, Berlin, Germany). Meetings with all coders were organized to discuss discrepancies in coding procedures and to reach consensus. Subsequently, codes representing similar topics were combined into broader factors. Facilitating and hampering factors were then classified into the different groups of the theoretical framework [16]. Finally, results were discussed with an expert panel consisting of members with different backgrounds and expertise (physician/researcher RD, researcher CvS, researcher FJH). Two other members of the panel (LvdW and MD) reflected on the final results and recommendations. A selection of quotations was translated into English to illustrate the results.

**Results**

A total of 22 interviews with rehabilitation professionals (n=28) involved as project leader (n=21) or counselor (n=7), were held between November 2014 and March 2015. Of these 22 interviews, 6 interviews were conducted with 2 professionals (i.e. double interview design). Interview duration ranged from 40 to 115 minutes (mean: ±70 minutes). Two interviews with duration of ±80 minutes per session were conducted with the two program coordinators in October 2014 and April 2015. Table 4.2 gives an overview of the rehabilitation setting and characteristics of the conducted interviews.

**Facilitating and hampering factors**

Tables 4.3 and 4.4 show the perceived facilitating and hampering factors reported by professionals for the implementation and continuation of the RSE program. A selection of quotations to illustrate the findings is presented in table 4.5.

Professionals mentioned factors related to the following categories: ‘socio-political context’, ‘organization’, ‘program’, professional’, ‘patients’ and ‘implementation strategy’. Factors related to the ‘patients’ were only mentioned in the implementation phase. A few factors were only stated by professionals working in a general hospital (table 4.3 and 4.4).
Table 4.2
Setting and characteristics of all conducted interviews (n=24)

<table>
<thead>
<tr>
<th>Interview</th>
<th>Professionals’ role&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Setting</th>
<th>Interview design&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>I1</td>
<td>Project leader + manager</td>
<td>Hospital + center</td>
<td>Single</td>
</tr>
<tr>
<td>I2&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Counselor</td>
<td>Hospital + center</td>
<td>Single</td>
</tr>
<tr>
<td>I3</td>
<td>Project leader (previous)</td>
<td>Hospital</td>
<td>Single</td>
</tr>
<tr>
<td>I4&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Counselor</td>
<td>Hospital</td>
<td>Single</td>
</tr>
<tr>
<td>I5</td>
<td>Project leader</td>
<td>Hospital</td>
<td>Single</td>
</tr>
<tr>
<td>I6</td>
<td>Project leader + manager</td>
<td>Hospital + center</td>
<td>Double</td>
</tr>
<tr>
<td>I7</td>
<td>Project leader</td>
<td>Center</td>
<td>Double</td>
</tr>
<tr>
<td>I8</td>
<td>Project leader + manager</td>
<td>Center</td>
<td>Single</td>
</tr>
<tr>
<td>I9</td>
<td>Project leader + counselor</td>
<td>Center</td>
<td>Single</td>
</tr>
<tr>
<td>I10</td>
<td>Project leader + manager</td>
<td>Center</td>
<td>Single</td>
</tr>
<tr>
<td>I11</td>
<td>Project leader + manager</td>
<td>Hospital</td>
<td>Single</td>
</tr>
<tr>
<td>I12&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Counselors (n=2)</td>
<td>Hospital</td>
<td>Double</td>
</tr>
<tr>
<td>I13</td>
<td>Project leader</td>
<td>Hospital</td>
<td>Single</td>
</tr>
<tr>
<td>I14</td>
<td>Project leader</td>
<td>Center</td>
<td>Single</td>
</tr>
<tr>
<td>I15</td>
<td>Project leader + manager</td>
<td>Center</td>
<td>Single</td>
</tr>
<tr>
<td>I16</td>
<td>Project leader + counselor</td>
<td>Center</td>
<td>Single</td>
</tr>
<tr>
<td>I17</td>
<td>Project leader</td>
<td>Hospital</td>
<td>Single</td>
</tr>
<tr>
<td>I18</td>
<td>Project leader + counselor</td>
<td>Center</td>
<td>Single</td>
</tr>
<tr>
<td>I19</td>
<td>Project leader</td>
<td>Center</td>
<td>Single</td>
</tr>
<tr>
<td>I20&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Counselor</td>
<td>Center</td>
<td>Single</td>
</tr>
<tr>
<td>I21</td>
<td>Project leader (previous)</td>
<td>Center</td>
<td>Double</td>
</tr>
<tr>
<td>I22</td>
<td>Project leader</td>
<td>Center</td>
<td>Double</td>
</tr>
<tr>
<td>I23</td>
<td>Program coordinators (n=2)</td>
<td>n/a</td>
<td>Double</td>
</tr>
<tr>
<td>I24</td>
<td>Program coordinators (n=2)</td>
<td>n/a</td>
<td>Double</td>
</tr>
</tbody>
</table>

<sup>a</sup>Interviews were conducted by a research assistant. n/a = not applicable.

<sup>b</sup>Some professionals fulfilled two roles (e.g. project leader + manager or project leader + counselor).

<sup>c</sup>A double interview design indicates that the interview was conducted with two professionals.
Counselors mainly talked about factors related to the execution of the program, such as the flexibility of providing counseling sessions, the additional value of the program and characteristics of their patients. Project leaders named factors related to diverse categories both more on a management level (e.g. organizations’ vision/wish, financial aspects) as well as on a more practical level (e.g. flexibility and compatibility of the program). The two program coordinators emphasized the engagement of physicians in the implementation and the support from rehabilitation professionals within the organization to implement and continue the RSE program. The next section provides a detailed description of perceived facilitating and hampering factors.
### Table 4.3
Facilitating and hampering factors to the implementation of the “Rehabilitation, Sports and Exercise” program

<table>
<thead>
<tr>
<th>Categories</th>
<th>Facilitating factor</th>
<th>Hampering factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Socio-political context</td>
<td>- Collaboration with and (financial) support from the local municipality&lt;sup&gt;b&lt;/sup&gt;</td>
<td>- Local municipality had ended the financial support&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>- Collaboration and network between SCC and external parties were good and/or improved&lt;sup&gt;b&lt;/sup&gt;</td>
<td>- Uncertainty about how to continue the RSE program after 2015&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>- Possibilities to participate in sports and exercise activities for disabled persons were good and/or enlarged</td>
<td>- Possibilities to participate sports and exercise activities for disabled persons were limited</td>
</tr>
<tr>
<td>b) Organization</td>
<td>- The content of the program is in line with organizations’ vision and/or wishes&lt;sup&gt;b&lt;/sup&gt;</td>
<td>- No wish to implement the program&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>- (More) structural integration of sports and exercise in rehabilitation care&lt;sup&gt;b&lt;/sup&gt;</td>
<td>- Sports and exercise were no key points of attention in hospital care&lt;sup&gt;a,b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>- Sufficient sports and exercise facilities within the organization</td>
<td>- Limited sports and exercise facilities in hospital&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>- The support from rehabilitation professionals to implement the program was good and/or improved&lt;sup&gt;b&lt;/sup&gt;</td>
<td>- Lack of support from physicians and therapists to implement and execute the program&lt;sup&gt;a,b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>- Communication and collaboration among departments/professionals were good and/or improved&lt;sup&gt;b&lt;/sup&gt;</td>
<td>- Poor communication and collaboration between counselors and physiotherapists&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>- Referral of patients to SCC was a standard procedure of rehabilitation treatment</td>
<td>- Referral of patients to SCC was dependent on one professional (physician)</td>
</tr>
<tr>
<td></td>
<td>- All members of multidisciplinary team could refer patients to SCC</td>
<td>- Insufficient financial resources to meet organizations’ wishes regarding implementation of the RSE program</td>
</tr>
<tr>
<td></td>
<td>- Availability of (additional) financial resources</td>
<td>- Implementation of the program at more departments/locations of the organization</td>
</tr>
<tr>
<td></td>
<td>- Good collaboration between rehabilitation department in hospital and a surrounding rehabilitation center&lt;sup&gt;a,b&lt;/sup&gt;</td>
<td>- Changes in organization (such as fusion, reorganizations, staff turnover)</td>
</tr>
<tr>
<td></td>
<td>- Knowledge and visibility of the program (SCC) were good and/or improved</td>
<td>- Lack of knowledge and bad visibility of the program (SCC) within organization</td>
</tr>
<tr>
<td>Categories</td>
<td>Facilitating factor</td>
<td>Hampering factor</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>c) Professionals</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Counselor</td>
<td>- Being committed and enthusiastic to implement the program(^b)</td>
<td>- Lack of motivation to implement the program</td>
</tr>
<tr>
<td></td>
<td>- Being a member of the multidisciplinary rehabilitation team</td>
<td>- Being appointed from outside the organization</td>
</tr>
<tr>
<td></td>
<td>- Receiving support from colleagues to implement the program (other counselors, project leader, managers)</td>
<td>- Limited available time to implement and execute the program</td>
</tr>
<tr>
<td></td>
<td>- Good skills and knowledge to implement and execute the RSE program</td>
<td>- Lack of support from project leader/ managers</td>
</tr>
<tr>
<td>- Physician</td>
<td>- Actively involved in the implementation of the program</td>
<td>- Lack of time</td>
</tr>
<tr>
<td></td>
<td>- Enthusiastic to implement the program</td>
<td>- Negative attitude towards implementation of the program(^b)</td>
</tr>
<tr>
<td></td>
<td>- Positive attitude towards the implementation of the program</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Sufficient knowledge of the content and aim of program</td>
<td></td>
</tr>
<tr>
<td>- Project leader</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Being committed and enthusiastic to implement the program(^b)</td>
<td>- Limited available time for the implementation of the program</td>
</tr>
<tr>
<td></td>
<td>- Good skills and knowledge to implement the program</td>
<td>- High work load</td>
</tr>
<tr>
<td></td>
<td>- Working as a counselor in SCC or being a manager of a department</td>
<td>- Insufficient knowledge about the content of the program</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Not actively involved in the implementation of the program</td>
</tr>
<tr>
<td>d) Program</td>
<td>- Additional value of RSE program (particularly counseling sessions) was clear(^b)</td>
<td>- Program was difficult to understand</td>
</tr>
<tr>
<td></td>
<td>- Outcomes of the RSE program on patient level were visible for involved professionals(^b)</td>
<td>- Work load was increased due to additional administrative tasks</td>
</tr>
<tr>
<td></td>
<td>- Content of program was clearly described (Handbook)</td>
<td>- Reimbursement of counseling sessions was not possible</td>
</tr>
<tr>
<td></td>
<td>- Most components of the program could be reimbursed by insurance companies</td>
<td>- Adjustment existing working procedures was necessary to implement the program</td>
</tr>
<tr>
<td></td>
<td>- RSE program was easily compatible with current rehabilitation care</td>
<td>- Name ‘Sports Counseling Center’ could lead to wrong expectations</td>
</tr>
<tr>
<td></td>
<td>- A flexible execution of the counseling sessions(^b)</td>
<td>- Execution of the ReSpAct study</td>
</tr>
<tr>
<td></td>
<td>- Motivational Interviewing as basis for conversations</td>
<td>- Planning of telephone based counseling sessions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Protocol of counseling sessions was not suitable for all patients(^c)</td>
</tr>
</tbody>
</table>
### Categories

<table>
<thead>
<tr>
<th><strong>e) Patient</strong></th>
<th><strong>Facilitating factor</strong></th>
<th><strong>Hampering factor</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Being in high stages of behavior change towards physically active lifestyle&lt;sup&gt;a&lt;/sup&gt;</td>
<td>- Low stages of behavior change towards physically active lifestyle&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>- Committed to participate in sports and exercise activities&lt;sup&gt;b&lt;/sup&gt;</td>
<td>- Low social economic status&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>- Positive attitude towards sports and exercise activities&lt;sup&gt;b&lt;/sup&gt;</td>
<td>- Non-western origin</td>
<td></td>
</tr>
<tr>
<td>- Children/ adolescents</td>
<td>- Children/ adolescents</td>
<td></td>
</tr>
</tbody>
</table>

### f) Implementation strategy

- **National level**
  - Financial incentives<sup>b</sup>
  - Sharing of knowledge and experiences with other professionals<sup>b</sup>
  - Material provided to implement and execute the program
  - (Advisory) support from program coordinators
  - Writing project plan, annual plan and reports
  - Regional and national meetings were inspiring delivered valuable contribution<sup>b</sup>
  - Course in Motivational Interviewing<sup>b</sup>

- **Organizational level**
  - Creating awareness and knowledge about the program (give presentations, sending e-mails, newsletters)<sup>b</sup>
  - Reminding<sup>b</sup>
  - Registration and evaluation of outcomes of RSE program within organizations
  - An individual action plan to implement the program

<sup>a</sup> Only in hospital setting; <sup>b</sup> Detailed description is included in main text; SCC = Sports Counseling Center; RSE = Rehabilitation, Sports and Exercise; ReSpAct study = Rehabilitation, Sports and Active lifestyle study. The ReSpAct study is designed to evaluate the RSE program [4,5].
Table 4.4
Facilitating and hampering factors to the continuation of the “Rehabilitation, Sports and Exercise” program

<table>
<thead>
<tr>
<th>Categories</th>
<th>Facilitating factor</th>
<th>Hampering factor</th>
</tr>
</thead>
</table>
| **a) Socio-political context**| - Collaboration among organizations/ stakeholders in rehabilitation care at national level  
- Collaboration with and (financial) support from the local municipality | - Uncertainty about how to continue the RSE program after 2015  
| **b) Organization**         | - The content of the program is in line with organizations’ vision and/or wishes  
- Structural integration of sports and exercise in rehabilitation care  
- Sufficient support from physicians and management to continue the program  
- Wish and expectation to continue the RSE program | - Sports and exercise were no key points of attention in hospital care  
- Lack of financial resources to continue all components of the RSE program |
| **c) Professionals**        | - Positive attitude towards continuation of the program  
- Enthusiasm to continue the program | - Counselor was appointed from outside the organization during implementation period  
| (counselor, physician, project leader) | | |
| **d) Program**              | - Additional value of RSE program (particularly counseling sessions) was clear  
- Most components of the program could be reimbursed by insurance companies  
- Possibility to be more flexible in execution of the counseling sessions  
- Conclusions of the ReSpAct study | - Reimbursement of counseling sessions was not possible  
- Lack of financial incentives from ‘Onbeperkt Sportief’ |
| **e) Implementation strategy** | - Sharing of knowledge and experiences with other professionals  
- National and regional meetings | |

*Only in hospital setting;  † Detailed description is included in main text; SCC = Sports Counseling Center; RSE = Rehabilitation, Sports and Exercise; ReSpAct study = Rehabilitation, Sports and Active lifestyle study. The ReSpAct study is designed to evaluate the RSE program [4,5].
Table 4.5
Examples of quotations to illustrate the findings

<table>
<thead>
<tr>
<th>Factor</th>
<th>Example of quotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaboration with and (financial) support from the local municipality (F)</td>
<td>“The local municipal government set up the Sports Counseling Center in 2010. And they [municipal government] paid also for it [Sports Counseling Center]” [14]</td>
</tr>
<tr>
<td>(More) structural integration of sports and exercise in rehabilitation care (F)</td>
<td>“We have been working for years now to improve the position of the ‘Sports and Exercise therapy’ department. And we are trying to create a more equal position of sports therapy within the rehabilitation team. […] and the implementation of this [RSE] program has definitely positively contributed to that process.” [116]</td>
</tr>
<tr>
<td>No wish to implement the program (H)</td>
<td>“Setting up the Sports Counseling Center was initiated by our manager without any support from other professionals working in our department. So it was basically shoved down our throats. And that created resistance against the plan.” [15]</td>
</tr>
<tr>
<td>Lack of support from physicians and therapists to implement and execute the program (H)</td>
<td>“We [sports therapists] will never get a similar status compared to the physiotherapists. That would be impossible. The status of the physiotherapists is a very important part of the rehabilitation treatment for both patient and physician.” [116]</td>
</tr>
<tr>
<td>Content of program was clearly described (Handbook) (F)</td>
<td>“It is good that there is a guideline available for the execution of the program. It helps to select proper moments for calling patients. But indeed, sometimes it is better to deviate from the guideline.” [112]</td>
</tr>
<tr>
<td>A flexible execution of the counseling sessions (F)</td>
<td>“I notice that patients are very enthusiastic about the guidance, and they [patients] are especially enthusiastic about the counseling part” [112]</td>
</tr>
<tr>
<td>Additional value of RSE program (particularly counseling sessions) was clear (F)</td>
<td>“It means that we are able to provide better care, especially as a result of the counseling sessions after rehabilitation” [16]</td>
</tr>
<tr>
<td>(Advisory) support from program coordinators (F)</td>
<td>“The program coordinator was the person who contacted us with or without a request. His/her enthusiasm was inspiring.” [110]</td>
</tr>
<tr>
<td>Creating awareness and knowledge about the program (F)</td>
<td>“You give a presentation, people are interested, committed and enthusiastic. But after 4 weeks, they have forgotten all about it or they did not pay attention to it anymore […] so you have to remind them, and remind them.” [16]</td>
</tr>
</tbody>
</table>

F=facilitating factor; H= hampering factor.
Facilitating and hampering factors

Socio-political context

Network
During implementation, almost all organizations have started or have strengthened their collaborations with the municipal governments, non-profit foundations and/or providers of sports activities, such as sports clubs or fitness clubs. Good collaborations and a good network enabled counselors to gain (up-to-date) information about possibilities to participate in sports and exercise activities for disabled persons in the region.

Uncertainty about the continuation
Almost all professionals expressed their uncertainty about the continuation of the program after 2015 (table 4.4a) which was thought to be related to the expected changes in the financial system of the Dutch rehabilitation care. Since, in general, financial resources for healthcare have been under pressure, professionals were worried about the future and some managers were therefore restrained in their decisions to expand the SCC.

To overcome this uncertainty, professionals suggested the importance to continue the nationwide cooperation among rehabilitation organizations after program period. This could help to share ideas and seek for financial possibilities to embed the RSE program into the routines of the organizations after the program period.

Organization

Vision and wishes
A commonly mentioned facilitating factor for both phases was the fact that the content of the RSE program was in line with the organizations’ vision and/or wishes (tables 4.3 and 4.4). In some organizations there was already an operating SCC before the start of the program period. Participating in the RSE program gave them the opportunity to implement a SCC at more locations of their organization and/or to intensify and expand the guidance at the existing SCC. Other professionals reported that participating in the RSE program provided the opportunity to integrate sports and exercise, including tailored counseling, in a more structural way.

Moreover, almost all professionals experienced that sports and exercise had received a more important and structural place into rehabilitation care by implementing the RSE program. Several professionals highlighted the impact
of the implementation process on the position of the department ‘Sports and Exercise therapy’ and the position of sports therapists\(^2\) in the multidisciplinary rehabilitation team (table 4.5).

**Support from rehabilitation professionals**

Support from rehabilitation professionals from all levels (managers, physicians, therapists) was a commonly perceived influencing factor (table 4.3b and 4.4b). At the start of the implementation, some professionals encountered insufficient support from physicians and/or therapists to execute the RSE program, which hampered the referral of patients to the SCC. Consequently, both project leaders and counselors have spent a lot of effort in creating a committed environment regarding the promotion of sports and physical activities during rehabilitation. For the continuation phase, support from managers and physicians was emphasized as an important influencing factor, since these professionals can have an impact on decision-making processes (table 4.4b).

One project leader working in a hospital was not satisfied with the decision to implement the RSE program (table 4.5). The project leader explained that the involved manager decided to participate in the RSE program, despite the fact that physicians of the rehabilitation department did not support it. One reason for the lack of support, as reported by the project leader, was that most patients who were treated at the rehabilitation department were not eligible to be referred to the SCC. In addition, facilities for sports and exercise activities in that concerning hospital were perceived limited and experienced as a barrier to the integration of sports and exercise during rehabilitation.

**Physiotherapy and sports therapy**

A commonly perceived barrier was the lack of support from physiotherapists to refer patients to the SCC. Several physiotherapists did not see the necessity of setting up a SCC. Professionals recognized a hierarchy in which physiotherapy was seen as a more important component of a rehabilitation treatment than sports therapy. Improving the communication and collaboration between sports therapists and physiotherapists was a successful way to overcome this barrier in one hospital. On the other hand, in other organizations, the lack of support from physiotherapists remained a hampering factor (table 4.5).

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\(^2\) Sports therapists are health professionals educated to help and/or encourage people with disabilities or chronic diseases to participate in sports and exercise activities.
Sports and exercise promotion in hospital care
Most rehabilitation departments of hospitals did not recognize active lifestyle as a key point of attention in their provided care. This resulted in uncertainty about future plans among professionals in hospitals. The collaboration between a rehabilitation department in a hospital and a neighboring rehabilitation center was reported as a facilitating factor to the implementation and continuation of the RSE program in a hospital setting, since rehabilitation centers were in general more ‘sport minded’ compared with hospitals.

Professional
Committed and enthusiastic counselors
Almost all professionals stated that the involved counselors were committed to and enthusiastic about the implementation of the RSE program (table 4.3c). This enthusiasm was reported as an important factor to successfully implement the program, because counselors had a major role in promoting the RSE program (including SCC) within their organization and in creating support from their colleagues. In addition, professionals mentioned that rehabilitation professionals who were not committed to execute the RSE program were not selected to work as a counselor in the SCC.

Engagement of a rehabilitation physician
For many professionals, the engagement of physicians in the implementation was reported as a facilitator for the implementation and continuation of the program (table 4.3c and 4.4c). Since physicians play a key role in the multidisciplinary team, it was important that they had a positive attitude towards the RSE program. Furthermore, professionals explained that an enthusiastic and committed physician could enable the implementation by creating support from their physician colleagues.

Program
Additional value
Almost all professionals were positive about the content and nationwide design of the RSE program. Moreover, the additional value of the RSE program, especially the tailored counseling sessions, was clear for all professionals (table 4.5). Counselors experienced that the guidance they provided to their patients was effective, which was a clear stimulating factor.
**Flexibility**

Despite the fact that professionals were very positive about the program, they also mentioned that counselors experienced difficulties to apply the protocol of the counseling sessions to all patients. Counselors preferred to be more flexible in the number and moments of counseling sessions to be more in line with needs and wishes of their patients. Because several counselors perceived problems to reach patients by telephone, counseling sessions were sometimes performed by email. In general, counselors had positive experiences with performing counseling sessions by email. They mentioned that the counseling by email was time-consuming and could be carried out in a more flexible way. However, most counselors preferred a telephone conversation with their patients. Almost all professionals reported that a more flexible execution of the counseling sessions was required for the continuation (table 4.4d).

**Patients**

According to the professionals, patients participating in the RSE program generally had a positive attitude towards physical activities and appreciated the tailored support from the SCC. Counselors experienced that the support to patients in low stages of behavioral change (low level of motivation) was more challenging compared to patients in higher stages of behavioral change (high level of motivation). The socio-economic status of patients also played a role in the execution of the program. Some patients had limited financial resources for engaging in physical activities, which hampered a referral of patients to activities outside the organization and/or in personal environment.

**Implementation strategy**

*Activities on national level*

Professionals reported that financial incentive gave the opportunity to accelerate the implementation process. However, some professionals preferred to receive financial incentives over a longer period.

The extent to which professionals communicated with program coordinators and received advisory support varied among organizations. Independent of the degree of support provided, professionals experienced it as a positive factor (table 4.5).

For almost all professionals, the meetings organized with the involved professionals contributed positively to the implementation and continuation
Facilitating and hampering factors of the RSE program. Professionals emphasized the additional value of sharing knowledge and experiences with professionals from other organizations. The planning of meetings for a selection of professionals, such as meetings for managers/project leaders and meetings for counselors, provided additional benefits.

Project leaders and counselors were very positive about the structured training in motivational interviewing and highlighted the broad possibilities for application to general rehabilitation care.

**Activities at organizational level**
To create awareness and to provide information about the RSE program within the organization, project leaders and counselors gave oral presentations to other departments in the organizations, e-mailed information to colleagues and/or published information on the internal website/newsletter of the organization. Professionals highlighted the importance of regularly repeating these activities (table 4.5).

**Discussion**
The results of this study showed that professionals perceived a heterogeneous set of factors that facilitated or hampered the implementation and continuation of a physical activity promotion program in rehabilitation care. Some factors, such as collaboration with other organizations, financial resources, organizations’ vision/wishes, support from professionals, uncertainty about future, and additional value of the program, were reported to influence both phases. Other factors were perceived only as influencing factor during implementation (e.g. collaboration among professionals within the organization, patients’ characteristics, activities related to the implementation strategy) or continuation (e.g. conclusions of the ReSpAct study).

The literature showed that financial resources/reimbursement, time available, professionals’ attitude and support from organization are frequently cited influencing factors to the implementation of a physical activity (promotion) program in rehabilitation care [18-22] or in primary healthcare [15,23,24]. These factors were also reported by professionals involved in the current study to hamper and/or facilitate the implementation process. Some
factors specifically related to the RSE program (e.g. name of ‘sports counseling center’, linked ReSpAct study, motivational interviewing) were not mentioned at an earlier stage in literature.

In contrast to previous studies [14,25,26], lack of knowledge or skills to implement the program was not experienced as a hampering factor by professionals in the current study. An explanation might be that the professionals involved in the current study were actively supported during the implementation. Several activities related to the implementation strategy (i.e. meetings, courses in motivational interviewing, up-to-date materials) may have contributed to the fact that the professionals did not report lack of knowledge and skills as a hampering factor. Although the effectiveness of using a multifaceted strategy to support an implementation process is debatable [7,27,28], the experiences of the professionals in the current study suggest that the different activities used to support the implementation of the RSE program may have contributed positively to this process. The question remains, however, whether the combination of activities applied in the current study was the most optimal and efficient way to successful implementation. Future research should therefore focus on (cost)effectiveness of (combinations of) activities to support the implementation and continuation of physical activity promotion in rehabilitation.

Although professionals were very positive about the implementation process and were supported to successful implementation, they all expressed their uncertainty about the continuation of the program. Almost all factors (e.g. reimbursement, vision/wishes of the organization, collaboration, professionals’ attitude/motivation) that were perceived by professionals as influencing the continuation of the program were stated in previous literature on influencing factors of physical activity promotion in primary healthcare [23,26]. However, no studies have been found focusing on the identification of factors influencing the continuation/sustainability of a physical activity promotion program in rehabilitation care. The importance of distinguishing between phases has been pointed out several times [14,16,26,29,30]. As shown in the current study and based on previous literature conducted in other healthcare settings [8,14,15,26,31], we know that reimbursement of the program, effectiveness of the program and policy of the organizations are important factors to successfully continue a physical activity promotion program.
In addition to these findings, we formulated recommendations based on three “umbrella” factors that may contribute to the sustainability of the performing activities to promote physical activity during and after rehabilitation (table 4.6). The first factor is the flexibility of the program. Professionals in the current study mentioned that a more flexible execution of the program was required to continue the program within the context of their organization. Since rehabilitation care is characterized by a multidisciplinary setting with a heterogeneous patient group, the program should allow a flexible approach. The importance of adapting an evidence-based program to the healthcare context has been highlighted by several other researchers [8,32,33]. According to Damschroder et al. [32], a program includes “key components” and “adaptable elements”. To maintain effectiveness of the program, these “key components” should be implemented according to the protocol, while changes may be allowed in the “adaptable elements”. In the current study, the “key components” of the RSE program were clearly defined (i.e. intake, face-to-face sessions, counseling) [4]. Concerning the “adaptable elements”, we do not know how many and what kind of adaptations (i.e. mail-based counseling, use of other social media) are acceptable to maintain the desirable outcomes on patient level. Although different adaptations may have a different influence on patient outcomes [8,34,35], adaptations seem essential to sustain the program within the organization [8,33]. As a result, the way physical activities are integrated in rehabilitation may differ between patient groups and between

Table 4.6
Recommendations to enhance (further) embedding of physical activity promotion activities during and after rehabilitation.

<table>
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<th>Recommendations for future</th>
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<td>1) Implement key components of an evidence-based procedure that integrate physical activities into rehabilitation (e.g. RSE program) and adapt this procedure to the local multidisciplinary context.</td>
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<td>2) Establish local ownership by selecting committed and enthusiastic professional(s) who are responsible for the implementation and continuation of physical activities into rehabilitation.</td>
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<tr>
<td>3) Establish national ownership by selecting a foundation or (group of) professionals that is responsible for nationwide cooperation between organizations to overcome future barriers related to the integration of physical activities into rehabilitation.</td>
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organizations. Based on literature from other settings [33,36], this variation may be used to further optimize the procedure of embedding physical activities into rehabilitation care. Collecting data about the number and type of adaptations made within each organization, is therefore highly recommended [36].

The second factor is the attitude of the professionals. All professionals emphasized the enthusiastic and committed counselors and physicians as being important for implementing and continuing the program. They highlighted that it is important to continuously create awareness, knowledge and support related to performing physical activities during and after rehabilitation among all members of the multidisciplinary team. To ensure that this will continue on the longer term, we recommend to appoint (a group of) professionals working in the organization who are responsible for a structural embedding of physical activities into rehabilitation. In this way, 'local ownership' is created, which has been previously shown to contribute positively to successful sustainability [31,33,37,38].

In Dutch rehabilitation care, most rehabilitation centers and some rehabilitation departments of hospitals included ‘Sports therapy’ as a separate field in rehabilitation care, which has the responsibility to embed sports and physical activities into rehabilitation [1]. However, the current study showed that some professionals experienced a lack of support from physiotherapists to embed physical activities into rehabilitation. In line with previous literature [27,39] we found that good communication and collaboration between members of the multidisciplinary team (e.g. sports therapists, physiotherapists, physicians) during implementation seems also essential for successful continuation. Again, ‘local ownership’ may facilitate this process.

The third factor is the nationwide collaboration. To overcome future barriers, professionals suggested continuing the nationwide collaboration among organizations. Again, to ensure the continuation of this collaboration, a (group of) professionals or a foundation should be responsible for this. In the same way, a ‘nationwide ownership’ should be established. Previous studies showed that such an ownership may facilitate the sustainability of evidence-based programs in healthcare settings [31,33]. In the current study, the program coordinators organized a membership of the RSE program, which includes continuous (advisory) support, information and up-to-date materials from program coordinators. All rehabilitation centers and rehabilitation departments of hospitals are invited to become a payed member of the RSE program after
program period (2012 – 2015). In this way, a ‘national ownership’ is created and collaboration among organizations on national level may continue, which is expected to strengthen the RSE program. This may positively contribute to a structural embedding of physical activities into rehabilitation in the long term.

A limitation of this study is the possible selection bias. We only selected professionals working in one of the organizations participating in the RSE program [4]. It is likely that these professionals were in general more positive about the implementation of the physical activity promotion program compared to other rehabilitation professionals. Furthermore, professionals received support during the implementation phase with the use of a multifaceted strategy. This may explain why, in general, professionals were very positive about the implementation process. Future studies should investigate whether rehabilitation professionals working in organizations that were not supported in implementing a physical activity promotion program, perceive other facilitating and hampering factors. On the other hand, because organizations received support during the implementation phase, the start of the continuation phase was clearly defined. Therefore, professionals were able to distinguish between factors that influence the implementation and/or continuation. Another limitation of the current study is that we did not collect data about influencing factors perceived by physicians. It is therefore possible that we missed some important information. However, our sample still consisted of a heterogeneous group of professionals that perceived a heterogeneous set of influencing factors.

Lastly, in this study we built upon successful results of a previous RCT using self-reported physical activity outcome measures [3]. It is thus possible that the successful results of this previous RCT may be overestimated [40]. Therefore, the ReSpAct research group is currently re-evaluating the outcomes of the RSE program on patient-level [5]. Although the ReSpAct study uses also self-reported measures, longitudinal data are available from a large and heterogeneous study population (n=1719). Moreover, objective data of physical activity levels are obtained from a subgroup of patients in order to gain insight into the validity and reliability concerning self-reported physical activity measures in the context of the present study.

In conclusion, rehabilitation professionals perceived a heterogeneous set of factors that facilitate or hamper the implementation and continuation of a physical activity promotion program in rehabilitation care. We formulated
three recommendations to enhance (further) embedding of physical activity promotion during and after rehabilitation: 1) implement key components of an evidence-based procedure and adapt these to the local multidisciplinary context; 2) establish local ownership; 3) establish national ownership.

Acknowledgements
The authors would like to thank Daan van Kooten and Eline Brans for their assistance in data collection and data analyses. The authors would also like to thank the following 18 organizations for their support in the ReSpAct study: Adelante zorggroep, Bethesda Ziekenhuis, De Trappenberg, De Vogellanden, Maasstad Ziekenhuis, Medisch Centrum Alkmaar, Militair Revalidatiecentrum Aardenburg, Revalidatiecentrum Leijpark, Revalidatiecentrum Reade, Revalidatie Friesland, Revant, Rijnlands Revalidatiecentrum, RMC Groot Klimmendaal, Scheper Ziekenhuis, Sint Maartenskliniek, Sophia Revalidatie, Tolbrug Revalidatie, ViaReva.

Declaration of interest
This study was funded by the Dutch Ministry of Health, Welfare and Sport (grant no. 319758) and supported by Stichting Onbeperkt Sportief. The authors report no declarations of interest.
Facilitating and hampering factors

References


Facilitating and hampering factors


Appendix 4.1

Visual overview of content of the interview with rehabilitation professionals.

Professionals received this diagram by e-mail in order to motivate professionals to think about perceived facilitators and barriers. The diagram was based on the theoretical framework of Wierenga et al. (2013). The ‘start’, ‘implementation’ and ‘embedment’ represent the three main phases (adoption, implementation, continuation) of the theoretical framework. The grey box with ‘influencing factors’ contains the five categories of the ‘implementation determinants’ presented in the framework. The activities related to the implementation strategy were not included in the diagram that was send to professionals prior to the interview, but these were added to the diagram and explained by the researcher at the end of the interview. Moreover, this diagram was used as a tool to guide the interview. Dates of signature of declaration to participate, signature of agreement to participate and the official approval of the project plans varied among organizations.