Self-efficacy, Vocational Rehabilitation and Transition to Work

ÅSA ANDERSÉN
The overall aim of this thesis was to examine the relationship between self-efficacy, individually tailored vocational rehabilitation and transition to work or studies.

Study I was a cross-sectional study based on questionnaire- and registry data, investigating whether factors related to sick leave predict self-efficacy in women on long-term sick leave \( (n=337) \) due to pain and/or mental illness. General self-efficacy was low. Anxiety and depression were the strongest predictors for low self-efficacy.

Study II used longitudinal data from a randomised controlled trial, comprising partly the same women \( (n=401) \) as in Study I. Participants were allocated to either 1) assessment of multidisciplinary team and multimodal intervention (TEAM), 2) acceptance and commitment therapy (ACT), or 3) control group. Self-efficacy increased in the TEAM group in comparison with the control group.

Study III had a descriptive qualitative design with individual interviews, studying participants’ \( (n=14) \) experiences with an individually tailored vocational rehabilitation project, and encounters with professionals working in it. The participants, who were on long-term sick leave due to mental illness or pain reported overall positive experiences with the project. The project was based on collaboration between authorities and motivational interviewing. The positive experiences were based on four categories: Opportunities for receiving various dimensions of support, Good overall treatment by the professionals, Satisfaction with the working methods of the project, and Opportunities for personal development.

Study IV was a prospective cohort study investigating perceived self-efficacy in unemployed young adults \( (n=249) \) aged 19-29 year with disabilities, and the association between self-efficacy and transition to work or studies. The study used questionnaire- and registry data from a vocational rehabilitation project. Higher levels of self-efficacy were associated with increased odds for ‘transition to work’. General self-efficacy was low, and young adults with lower self-efficacy reported worse self-rated health compared with those with higher self-efficacy.

This thesis showed that multidisciplinary assessment with a multimodal intervention had positive effects on self-efficacy. Individually tailored vocational rehabilitation, based on cooperation and motivational interviewing, may be beneficial for individuals on long-term sick leave and the interactions between participants and the professionals may affect participants’ self-efficacy positively. Mental health needs to be considered when targeting self-efficacy in vocational rehabilitation. Furthermore, research is needed to a) clarify which components in the multidisciplinary team intervention can increase self-efficacy, b) study the effects of vocational rehabilitation based on an individual design, cooperation and motivational interviewing on self-efficacy, health and transition to work, and c) develop interventions that can increase self-efficacy and support transition to work/studies in young adults with disabilities.

Keywords: Self-efficacy, Vocational Rehabilitation, Sick leave, Women, Multidisciplinary rehabilitation, Chronic pain, Mental illness, Motivational interviewing, Young adults, Disability, Unemployment

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To my family

“Your beliefs become your thoughts,  
Your thoughts become your words,  
Your words become your actions,  
Your actions become your habits,  
Your habits become your values,  
Your values become your destiny”

A quote used by Mahatma Gandhi
This thesis is based on the following papers, which are referred to in the text by their Roman numerals.


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### Abbreviations

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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACT</td>
<td>Acceptance and commitment therapy</td>
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<td>CMD</td>
<td>Common mental disorders</td>
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<td>DB</td>
<td>Disability benefits</td>
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<td>DP</td>
<td>Disability pension</td>
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<td>GSE</td>
<td>The General Self-Efficacy Scale</td>
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<td>HADS</td>
<td>The Hospital Anxiety and Depression Scale</td>
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<tr>
<td>ICD</td>
<td>International Statistical Classification of Diseases and Related Health Problems</td>
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<tr>
<td>IPS</td>
<td>Individual placement and support</td>
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<td>CBT</td>
<td>Cognitive behavioural therapy</td>
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<td>MI</td>
<td>Motivational interviewing</td>
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<td>RTW</td>
<td>Return-to-work</td>
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<td>SE</td>
<td>Supported employment</td>
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<td>SPES</td>
<td>Swedish Public Employment Services</td>
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<td>SSIA</td>
<td>Swedish Social Insurance Agency</td>
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<tr>
<td>SRH</td>
<td>Self-rated health</td>
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<td>WHO</td>
<td>World Health Organization</td>
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Definitions

The terms ‘impaired mental health’ and ‘mental illness’ (disease state) are often used interchangeably and there is no clear distinction between them. Another term that is often used in international scientific literature is common mental disorder (CMD). CMD comprises depression, generalised anxiety disorder, panic disorder, specific phobias, obsessive-compulsive disorder and post-traumatic stress disorder (1). In the following thesis, mental illness is used synonymously for subjective impaired mental health, mental illness and CMD. In Sweden, the International Statistical Classification of Diseases and Related Health Problems, (ICD-10) is used officially to classify diseases and related health concerns. ICD was established by the World Health Organization, WHO, and translated by the Swedish National Board of Health and Welfare (2).

In this thesis, the term transition to work or studies is used in the included studies. A large proportion of the study population was unemployed and for most of those who still had employment, RTW was not suitable.
Prologue

Since taking a course in public health science during my nursing education, I had hoped to be given the opportunity to work with public health issues to promote health and reduce the inequalities in health that exists in society today. This prompted my decision to retrain in the field, during which time I began to be interested in the research field of social medicine. This dissertation originated during my studies in public health. One part of the study programme was to write a major essay and I fortunate to have written mine in connection to an ongoing research project within the research field of interest.

The research project was aimed at women on long-term sick leave who would lose their sickness benefits from the social insurance system according to new regulations. I remember that the project manager for the study, who was also a researcher and teacher in the education programme, was initially a bit hesitant about letting me do this. Being a supervisor in combination with the work that the role as a project manager meant would be too time-consuming, especially as the project was in its start-up phase. Luckily for me, she relented and I was accepted into the research group. It was an incredibly instructive time that gave me an insight into the challenges we face in Sweden regarding increasing mental illness and high sickness rates. A year later, the essay was approved and I received my degree.

The trip could had ended there but instead I was given the opportunity to continue my work within the research group. The time as a research assistant went by and I enjoyed the work while both the research and the field became more interesting and exciting. So when the opportunity arose to become a research student, was the answer given. The essay I had written earlier became the basis for my research plan and this dissertation can be seen as a continuation of that work. So thank you, Ingrid, for letting me write that essay and for taking me on. Moreover, thanks to all of you, Ingrid, Kjerstin and Per, for supervising me during my time as a doctoral student. If it was not for you, I would never have been here today. It is a challenging research field, but I hope this dissertation can contribute to knowledge that hopefully can make a difference for some of you belonging to the target groups included in this work. This thesis is dedicated to you.
Introduction

Sick leave

Sick leave rates in Sweden had increased by 80% from 2010 to 2016 (3). This has generated a large number of individuals receiving sickness benefits (3), i.e. compensation paid to employed and unemployed persons by the Swedish Social Insurance Agency (SSIA) according to given rules in the event of impaired work ability due to sickness. Among the individuals who received sickness benefits at the end of 2016, mental illness accounted for 53% of the cases in women and 40% of the cases in men. Musculoskeletal disorders accounted for 19% in women and 24% in men (4).

In Sweden and other Western European countries women have been on sick leave more often and for longer periods of time than men for the past 30 years (5, 6). Compared to women in other Western and Northern European countries (France, Germany, Finland, Netherlands, United Kingdom, Norway, Denmark), women in Sweden have higher average rates of sickness absence, while the men in Sweden are below the average in sickness absence, compared to the men in these countries (7).

In 2016, a total of 625,000 individuals received sickness benefits in Sweden, of which 64% were women and 36% men (4). Of those who were on long-term sick leave (≥60 days) during the same year, 105,000 (67%) were women and 52,000 (33%) were men, demonstrating that women’s sickness rates were twice as high as those of men (4).

Until the end of the 1980s, musculoskeletal disorders were the most common reasons for long-term sick leave (more than 6 months), but during the 1990s mental illness increased (8). In 2015, mental illness constituted 45% of the causes of long-term sick leave (≥60 days) in women and 34% in men, followed by musculoskeletal diseases, which accounted for 19% of sick leave causes in women versus 22% in men; see Figure 1 (9).
The increase in mental illness encompasses both women and men, but since 2015, the men have had a higher rate of increase in psychiatric diagnoses than women. Current figures (2016) show that anxiety- and stress syndrome disorder (ICD-10 codes F40-F48) and mood disorders (ICD-10 codes F30-F39) constitute 90% of the reasons for sick leave in psychiatric diagnoses in both men and women (10). Mental illness is also shown to be more common in individuals under 50 whereas musculoskeletal disorders are more common in individuals over 50 years old (4).

The median time to completed sick leave for all diagnoses is 44 days, and almost all (96%) return to work (RTW). However, for those with psychiatric diagnoses, the corresponding days are 75, and about 93% of those RTW (11). It thereby takes a longer amount of time to RTW if the causes of sick leave are related to mental illness, which has been shown in a previous Swedish study (12).

There is a difference in the length of sick leave between those who are employed compared with those who are unemployed. At the end of 2015, the median length of on-going sick leaves was 123 days among employed persons and 307 days among unemployed persons (13).

Changes in the utilisation of social insurance over time

Historically, the number of days paid by the social insurance system had been increasing over time up until 1970 (14). Thereafter, the number of days...
paid varied in relation to the economic situation, with an increase during economic boom times and vice versa until the 2000s. New national regulations and levels of social insurance compensation have also entailed variations in sickness rates (8).

In 2008, the rehabilitation chain was introduced in Sweden to set in rehabilitative efforts at specific points in time to employed individuals on sick leave (15). A time limit was introduced for obtaining long-term sickness benefits from the SSIA. The time limit was intended to reduce the use of sickness insurance in favor of employment insurance, with the intention of increasing competitive employment among those on long-term sick leave (16). At the same time, the regulations for obtaining permanent sickness compensation (i.e. compensation for individuals aged 30 to 64 years who will probably never be able to work) became more stringent and could only be granted to those who are expected to have reduced working capacity in relation to all kinds of work in the labour market (17). The time limit for sickness benefits (914 days) was removed in 2016 (17).

Although there has been an increase in recent years in the number of new sick cases (defined by the SSIA as sick leave lasting longer than 14 days), the inflow to the social insurance has now diminished (10) and the length of sick leaves is increasing more slowly now than before, a pattern seen among both men and women (13). According to the SSIA, this attenuation in the inflow of new sick cases can partly be explained by the fact that the investigate process has been strengthened and improved, which has meant that the number of assessments in accordance with the time limits in the rehabilitation chain has increased. As a result, fewer individuals receive compensation from the social insurance, at the same time as more individual’s now also have their benefits withdrawn (10).

The rehabilitation chain also facilitates the cooperation between the SSIA, the Swedish Employment Service (SPES) and the employer. For unemployed individuals, work ability is assessed in relation to the jobs normally available on the labour market from the first day of a sick period. For employed individuals, there are specific points in time for assessing their work ability. Initially, work ability is assessed in relation to the individual’s usual work or other temporary work at his/her workplace, and sickness benefits can then only be provided if the individual is not supposed to do any work at his/her ordinary workplace. After 180 days of sick leave, the assessment is related to any kind of work normally available on the labour market (18). Those who are assessed for work in another job can be transferred to the SPES, registered as unemployed and get support from the SPES or, if necessary, get vocational rehabilitation (16). From day 366 of sick leave, an individual can only receive sickness benefits if he/she is assessed as unable to do any kind of work available on the entire Swedish labour market (18).
Young adults with disabilities

The proportion of young adults (aged 19-29 years) that have been newly granted disability benefits (DB), i.e. temporary compensation for reduced work capability as a result of disease, from the SSIA has increased during the last 10 years. However, during 2015, this escalation decreased among both men and women (10). The most common diagnoses for those receiving DB are mental and behavioural disorders (19).

The Swedish National Board of Health and Welfare defines disabilities as follows:

“A disability is a reduction of physical, mental or intellectual functional capacity. A disability can occur because of an illness or other condition or as a consequence of a congenital or acquired injury. Such diseases, conditions or injuries may be permanent or transient.” (20)

In Sweden (21), as in other European countries (22) young adults with disabilities have difficulties finding employment. This target group’s establishment in the labour market has also deteriorated considerably since the 1990s (23). The target group can be found in a variety of different social security systems through which they obtain social allowances (financial support from the municipalities), unemployment benefits or DB (22). In Sweden, the number of young adults receiving DB from the SSIA has increased by 50% over the last 15 years (19).

DB is a form of compensation that may be granted by the SSIA for prolonged schooling (for finishing studies) or due to impaired work ability (24). A large proportion of those who have been granted DB for prolonged schooling continue to receive this compensation even after school (25). The intention of DB is to encourage individuals to be involved in activities during the time they receive DB while having their compensation secured. The aim of the activities is to maintain functional capacity, stimulate the individuals’ development, affect the individuals’ functional capacity positively and increase their opportunities to improve work ability (26).

This increase in DB is explained by factors such as changes in the labour market, deteriorated school performance, the possibility to receive DB for prolonged schooling, and changes in the compensation rules at the SSIA. There has also been a general increase in mental illness among young adults (27).

More men than women are granted DB. For those who receive due to impaired work ability there is no difference in the number between the genders, but more men receive DB for prolonged schooling compared to women (10). Of those leaving DB at the age of 30, a higher proportion of men (68%) compared with women (61%) receive permanent sickness compensation
from the SSIA. Furthermore, the men have a 41% higher likelihood than women of having an income of at least 100,000 (28). Among those who were granted DB for impaired work ability during the second half of 2015 and the first part of 2016, 82% have a psychiatric diagnosis. Men and women differ in respect of the diagnoses underlying the SSIA’s decision. In women, anxiety- and stress disorders (ICD-10 codes F40-48), behavioural disorders (ICD-10 codes F90-F98) and psychological development disorders (ICD-10 codes F80-89) were the most common diagnoses, constituting 20% each. Among the men, the most common diagnoses were behavioural disorders (21%), anxiety- and stress disorder (12%) and one-third had psychological development disorders. Anxiety- and stress disorder and mood disorders (ICD-10 codes F30-F39) are more common among women than among men (10). Developmental disorder (ICD-10 code F84) and hyperactivity disorders (ICD-10 code F90) are the most commonly diagnoses in both men and women (10).

Activities that give opportunities to increase work ability in young adults with disabilities

The knowledge about the type of action that can give these young adults the opportunities to increase their work ability and promote their establishment in the labour market is limited (28-30). A review carried out by the Swedish National Audit Office shows that there is currently insufficient interventions and support from the SSIA to those who receive DB, which means that the purpose of the DB is not achieved. Regarding the efforts still offered, statistics and follow-up of these are currently missing from the SSIA (31). This has also been pointed out by the Swedish Social Insurance Inspectorate (ISF) (28). Since the proportion of young adults who receive activities and efforts to facilitate improvement in functional capacity and work ability during their time for DB is low (32), it is a risk that these individuals remain in social insurance benefits for a long time. In addition, it is argued that the group of young adults with DB is a heterogeneous group, which makes it difficult to assess which individuals are able to develop their work ability (33). It is also difficult to get an overall picture of both the size of the target group of young adults with disabilities, and their health- and employment status, regardless of which social security systems they receive compensation from, since various agencies use their own registry systems and do not share information with each other (22). However, supported employment (SE) (30) and individual placement and support (IPS) (29) seems to be successful methods for supporting young adults with disabilities into work. IPS is developed specifically for individuals with mental disabilities and is a version of SE, a generally method aimed at people with disabilities. The methods are based on the individual’s motivation and interests. A job coach supports and guides the
individual at the workplace and handles any problems encountered and there are no vocational rehabilitation efforts given before the job search and the commencement of work (34). Previous research by Beijerholm et al. (2015) showed positive results on the outcome of employment when using the IPS method as an intervention to support individuals with severe mental illness to work (35).

Factors influencing disability and the ability to work

It should be mentioned that there is no uniform definition of the concept ‘work ability’ (36, 37). However, in a review by Lederer et al. (2014), it was demonstrated that most definitions had the same consensus, which was that work ability (37):

“… is a relational concept resulting from the interaction of multiple dimensions that overlap and influence each other through different ecological levels.”

Previously, opinion held that the individual’s medical status was crucial for the opportunity to RTW. Over time and with increased knowledge, this view has changed and it is now established that the situation is more complicated than that. This also complies with the consensus of work ability and the opinion that factors other than medical condition are important for work ability (37). For example, motivation, attitude to RTW and disease experiences have, among other things, been shown to have an impact on RTW (38). The ability to work can change over time, at the same times as RTW is viewed as a process, which is complex since many factors may influence this process (39) and the individual’s work ability (40). Loisel et al. (2013) describe how, besides the personal system (physical, cognitive, affective and social domains), there are other different elements and systems influencing the individual’s illness and disability (41). These are the health care system, the workplace system and the legislative and insurance systems (41) (Figure 2). The model illustrates the influence of the various systems on the disability process and can be used as a guide for stakeholders’ actions (41). All of these factors need to be considered by the stakeholders taking part in the rehabilitation process in order to facilitate the individual’s RTW (42).
Vocational rehabilitation

Longer durations of sick leave (≥60 days) increase the need for vocational rehabilitation (8), which is rehabilitation interventions aimed at facilitating RTW (39). In the legal sense, under the social insurance system in Sweden, this means that the individual suffering from injury or illness will have the possibility to receive rehabilitation and thereby get prerequisites to regain work ability and be given the opportunity to support themselves through work (44).

To reach a positive outcome, the vocational rehabilitation programme should be planned in cooperation with the professionals working in the rehabilitation unit and the individual, and be designed according to the individual’s needs (45). The vocational rehabilitation might thus comprise medical and social as well as vocational contributions (46), leading to great variation in the design of the interventions. For example, vocational rehabilitation might have a cognitive approach (47) or may be integrated into a multimodal rehabilitation programme (48). The vocational rehabilitation includes support and efforts according to individual needs in addition to the medical rehabilitation, which may be investigations, guidance, rehabilitation or work-preparing activities (49). Cooperation between the stakeholders involved in the return to work process during the rehabilitation has been shown in previous research to have beneficial effects with improvements in mental function, pain (50) and RTW (51, 52). However, not many studies have examined the effects of cooperation initiatives for individuals on long-term sick leave with mental illness and/or pain-related problems.
Several actors are involved in the vocational rehabilitation. The SSIA is the administrator for various forms of compensation within the Swedish social insurance system, which provides economic security in case of illness or disability (53). The SSIA is also responsible for coordinating the rehabilitation process. All actions taken in the rehabilitation process should be planned in consultation with the individual, and be based on the individual’s needs and circumstances (24). Other actors involved in the vocational rehabilitation with different responsibilities are the municipalities (the social rehabilitation), the health care system (the medical rehabilitation), the SPES (the occupational rehabilitation), and the potential employers (54).

When individuals are on sick leave, the assessment of their work ability and the different activities offered to them have an important impact on the rehabilitation process and the outcome for the individual concerned. At the same time, the individual is dependent on how different stakeholders from the SSIA, the SPES and the health care system work and what decisions they make (55).

Negative consequences of unemployment and sickness absence

Although sick leave may prove necessary due to the duties the work involves, it is important to offer vocational rehabilitation since being unemployed or being on long-term sick leave can lead to negative consequences. Unemployment at a young age has been associated with negative effects on health and well-being (22, 56), future sickness absence and disability pension (DP), i.e. permanent sickness compensation for adults ≥30 years old who will probably never be able to work (19, 57) and increased risk of premature death (57). Similar to unemployment, longer periods of sick leave have been associated with negative effects for the individual. These include worsening finances (58), and decreased opportunity and desire to join in social and recreational activities (59). Individuals on sick leave for longer than 245 days have a 50% higher risk of not returning to work (60). Other associated negative effects include poorer mental health, sleep problems and problems with self-confidence, especially for those younger than 50 years of age. In addition, individuals over 50 years of age experienced alienation and guilt to a greater extent compared to younger individuals (59). Moreover, longer periods of sick leave may result in depressed mood, stress and increased pain (58). Long-term sickness absence also increases the risk for DP (61) and decreased self-efficacy (62).
Self-efficacy and vocational rehabilitation

Self-efficacy is a psychological factor that has been shown to be of importance for RTW (63). Except for the fact that self-efficacy has been shown to be negatively affected by sickness absence (62), higher self-efficacy has also been shown to be a predictor for RTW (12, 64-67), whereas a decline in self-efficacy has proved to be a negative predictor for RTW (68). In a study by Söderlund and Åsenlöf (69), self-efficacy was found to be a mediator between pain intensity and pain-related disability among individuals with whiplash injuries (69). Low self-efficacy may decrease participation in different activities and also in rehabilitation efforts and thereby limit an individual’s function and an eventual recovery. Moreover, correlations have been found between self-efficacy, attitude to work, experience of social support and time for RTW. However, these predictors can vary between different health conditions (12).
Theoretical framework

Many different factors may affect an individual’s work ability. Vocational rehabilitation requires cooperation between different stakeholders, and providing the right support for the individual and factors that may affect the individual’s work ability need to be considered. One of these factors associated with work ability is self-efficacy, which can be seen as part of the personal system that Loisel et al. (2013) described (41). This thesis will focus on the importance of the perspective of self-efficacy, while the theory of self-efficacy (70, 71) is used as the central theoretical framework.

Self-efficacy

There are different mechanisms that affect an individual’s psychosocial abilities, and one of the most central of these is the belief in the individual’s own ability. The social psychologist Albert Bandura is the founder of the concept of self-efficacy, which is a component in social cognitive theory (70). According to the theory, there is a mutual causal link between the individual (cognitive, emotional and biological factors) and environment and behaviour (72). Self-efficacy can be described briefly as an individual’s belief in his or her own ability to perform a specific action (70). Self-efficacy has been proven to be of great importance for the initiation and maintenance of behaviour change and can be enhanced and thereby is described to be a mediator for behavior (73). The concept is linked to the individual’s need to have influence and control over the events in their lives. Through control and influence, individuals can affect the direction and the outcome of what happens in their lives. Lack of influence and control over what happens creates stress, anxiety, apathy and feelings of hopelessness. The exercise of control also has a functional value that represents a strong source of and a drift towards motivation in individuals (70). According to Bandura, individuals have an influence over what they can do since an individual’s thoughts have an effect on their capacity. Thoughts affect the individual’s choice of actions, how much they will make an effort, how persistent they are, how they handle difficulties and also their ability to bounce back after setbacks. Patterns of thought can help individuals master difficult tasks and challenges in life but can also prevent and limit the individual’s ability to meet and deal with these. Emotional states and levels of motivation are based more on what
individuals believe about their ability than what is objectively true. Since feelings, motivation and actions influence the level of self-efficacy, Bandura believes that individuals have an influence over what they can do (70). Even experiences of stress, depression, expectations from other individuals and previous results have an influence over what individuals can do. Bandura also describes how there is a correlation between the experience of self-efficacy and health, since stress that arises from exposure to events that an individual experiences as uncontrollable can produce biological processes in the body. These biological processes can affect the individual’s health negatively if they are too intensive or prolonged (70).

Experiences of feelings of inefficacy or lack of confidence in their own ability to handle and deal with situations that are perceived as unpleasant or which cause aversion can result in individuals believing that accidents and catastrophes will happen. Such beliefs can give rise to worry and anxiety and lead to avoidance behaviour. Individuals who instead judge themselves as effective in dealing with possible dangers or difficulties, and thereby have high self-efficacy in relation to the actual situation, neither fear nor avoid these. By re-evaluating their own ability to perform a specific action, individuals change their experience of self-efficacy (71). Self-efficacy is domain-specific and varies in level and strength (70) depending on the task and context (73).

In daily life, individuals have to deal with varying circumstances by managing them in different ways. The evaluation of self-efficacy is followed by a series of processes in which the individual assesses their resources and their own ability regarding the current task (71).

Self-efficacy can be enhanced (73), and Bandura discloses that there are four different sources (Figure 3) of information from which an individual assesses their self-efficacy:

1. **Enactive mastery** is the most significant indicator for the individual’s ability. It is based on the individual’s earlier successes and failures. Successes build a strong belief in an individual’s own ability and reinforce the level of self-efficacy while failures weaken these. If the individual has had a feeling of confidence in succeeding with a specific task but then fails, the level of the individual’s self-efficacy can be particularly weakened. Individuals also assess their ability to succeed in a task based on factors such as the difficulty of the task, evaluating the help that can be obtained, external circumstances and the degree of effort required for the task.

2. **Vicarious experiences** relate to how the individual values their own capacity, and their ability in relation to others. The individual com-
pares himself to others (who are models), based on knowledge of the others’ skills and successes regarding the execution of a task.

3. *Verbal persuasion* implies that the individual increases their self-efficacy in regard to a specific task through social verbal persuasion by significant others. The persuasion strengthens the individual’s belief in having enough capacity to manage the task. The persuasion can contribute to greater endeavour and a better defence against any difficulties the individual encounters, which implies a greater chance of success.

4. *Physiological and affective states* imply that the individual judges their ability through the experience of their physical- and mental condition. Thus, the individual’s physical- and mental health, including the ability to handle stress, has an impact on self-efficacy (70).

Self-efficacy affects the goals individuals set for themselves (74). Individuals with high self-efficacy set higher and more challenging goals, are more focused and persistent in their pursuit of achieving these and have the expectation of a positive outcome (75). Positive expectations can encourage an
action while the reverse instead can act as an obstacle (70). Individuals with low self-efficacy will instead avoid challenging tasks and give up more easily in the face of adversities. They will also recover more slowly compared with individuals with high self-efficacy, which can increase stress and vulnerability for depression (76). According to Bandura, individuals with low self-efficacy needs interactive support and guidance to overcome obstacles (74).

Differentiation of related concepts

A concept that is described to be related to self-efficacy is self-esteem. Self-esteem is about how individuals feel about themselves and is more based on affective factors whereas self-efficacy is about how individuals judge their capabilities and is more based on motivational factors (77). Bandura describes self-esteem as whether one likes and respects oneself or not (78). Since self-esteem is a judgement of self-worth (70), which is connected to self-efficacy, Bandura argues that individuals can develop their self-efficacy by taking part in activities that produce feelings of self-worth (78). Empowerment can be seen as a process in which individuals gain mastery over their own health and lives; action in a direction that influences life in a positive direction. Empowerment is connected to self-efficacy since empowerment follows self-efficacy, i.e. an increase in self-efficacy is followed by increased empowerment, which in turn can continue to increase self-efficacy for future events (79). Coping also needs to be differentiated from self-efficacy, even if there are some similarities between the two concepts. Coping is defined by Lazarus (1993) as cognitive and behavioural efforts to manage stressful situations. Stress is defined as demands, internal or external, that are judged to be gruelling and/or exceeding the individual’s resources. Coping changes over time and depending on the context (80).

Measuring self-efficacy

There are several scales for measuring self-efficacy in various areas, and Bandura (71) points out that it is important to know that these scales do not measure an individual’s skills, but instead what individuals think they can do under different circumstances on the basis of their capability or the skill required for the task. How well an individual then performs the task is based partly on their belief in their own ability to manage and to orchestrate their skills but also on how much they are willing to make the effort and which intellectual resources they possess (71).

The following thesis measures general self-efficacy, which is the belief in one’s ability to handle a range of difficult or stressful demands or tasks.
Usually, self-efficacy is understood to be domain- or task-specific, as mentioned earlier. However, general self-efficacy is described to be a universal construct that is stable and can be characterised as an individual’s basic belief in their competence to handle a broad variation of demands in different contexts (81). According to Luszynska, Scholz and Schwarzer (2005), this generality is the strength of general self-efficacy, since it can be used in different domains in addition to more specific self-efficacy measures (75). To measure general self-efficacy in the following studies, the General Self-Efficacy Scale (GSE) was used. GSE measures a person’s belief in their ability to handle various difficult demands or tasks in life and was developed by Schwarzer & Jerusalem (81). The GSE refers to personal agency, which means the belief in someone’s actions being responsible for successful outcomes (82). There is no definite cut-off score for GSE, but in a general population the self-efficacy mean is found to be around 2.9 (82, 83).
Rationale for the present research project

To my knowledge, research is limited concerning factors that predict self-efficacy connected to long-term sick leave due to mental illness and/or pain. The experience of and the possibility to strengthen self-efficacy with vocational rehabilitation has not been fully explored. Furthermore, how self-efficacy is experienced by unemployed young adults with disabilities and might be related to future transition to work or studies needs to be investigated.

Research on self-efficacy and individually tailored vocational rehabilitation can give a deeper understanding of the importance of self-efficacy. It may also contribute to improvements in the design of vocational rehabilitation, which in the next step may increase the ability for RTW/transition to work or studies.

Overall and specific aims

The overall aim of this thesis was to study the relationship between general self-efficacy, individually tailored vocational rehabilitation and transition to work or studies.

The specific aims were to:

Study I

To investigate whether factors related to sick leave, view of the future, social support, and health predict self-efficacy in women on long-term sick leave because of pain and/or mental illness.
Study II
To investigate if two vocational rehabilitation interventions have improved self-efficacy in women on long-term sick leave ≥1 year due to mental illness and/or chronic pain, compared with controls.

Study III
To examine the experiences with an individually tailored vocational rehabilitation intervention targeting individuals on long-term sick leave, and encounters with the professionals working in it.

Study IV
To study perceived self-efficacy in unemployed young adults with disabilities and the association between self-efficacy and future transition to work or studies.
Methods

Design
Quantitative and qualitative research methods were used in the studies. An overview of the four studies are presented in Table 1.

Table 1. Study design and data collection methods used in Studies I-IV

<table>
<thead>
<tr>
<th>Study</th>
<th>Design</th>
<th>Data collection methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Cross-sectional study</td>
<td>Register data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Questionnaires, pre-treatment (before intervention)</td>
</tr>
<tr>
<td>II</td>
<td>Randomised controlled trial</td>
<td>Register data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Questionnaires, repeated measures; pre-treatment, follow-up at 6 and 12 months</td>
</tr>
<tr>
<td>III</td>
<td>Qualitative design</td>
<td>Individual interviews with open-ended questions</td>
</tr>
<tr>
<td>IV</td>
<td>Prospective cohort study</td>
<td>Register data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Questionnaires, pre-treatment</td>
</tr>
</tbody>
</table>

Setting
Studies I and II
The first and second study were conducted at a university hospital in Sweden within the framework of vocational rehabilitation. The studies were performed in cooperation with the local SSIA, the SPES and the municipality.

Studies III and IV
The third and fourth study were conducted in east central Sweden within the framework of vocational rehabilitation. The SSIA was the owner of the vocational interventions. The interventions were carried out in cooperation between the SSIA, the SPES and the municipalities. The professionals working in the intervention shared workplaces completely or in part.
Subjects

Studies I and II

Individuals who were expected to reach their time limit of maximum number of paid sick leave days within a certain length of time within the Social Insurance were invited to participate in a vocational rehabilitation study. The inclusion criteria were: women, being on sick leave for mental illness and/or pain, and age 20–64 years. The exclusion criteria were: presence of bipolar disorder type 1, schizophrenia, at current suicidal risk, ongoing substance or alcohol abuse (the diagnoses according to the sickness certificates), or taking part in psychotherapy or vocational rehabilitation programmes. All women took part in one of two randomised-controlled trials.

Study I comprised questionnaire- and registry data from 337 women. On average, the women were 48.7 years old (S.D. 8.5) and had been on sick leave for mental illness and/or pain for 7.8 years (S.D. 3.2). Around two-thirds of the women were employed and 20% were born outside Sweden. The distribution of diagnoses were: pain (30%), psychiatric (39%), and pain and psychiatric combined (31%).

The participants in Study II were the same as in Study I, but also included the non-responders at pre-treatment questionnaire (n=46) and the General Self-Efficacy Scale (n=18) and thus comprised data from 401 women. The average age of the participants in Study II was 48.7 years (S.D. 8.4). About one-fifth (21%) were born abroad. The women’s average time on sick leave was 7.8 years (S.D. 3.2) and 64% were employed. The distribution of diagnoses among the participants in Study II were pain (38%), psychiatric (31%) and pain and psychiatric combined (31%).

Study III

Individuals taking part in a vocational rehabilitation intervention, the Dirigo project, were invited to take part in the study. Of the 14 individuals taking part in the interviews, eight were women and six were men, all between 27-59 years of age with a mean age of 47.2 years. Most of the individuals had been on sick leave for 6 to 18 months. The included individuals had been on sick leave for a minimum of 180 days, due to mental illness (depression, borderline, bipolar disease) and/or pain. Other diagnoses were chronic obstructive pulmonary disease, cancer, alcohol abuse, high blood pressure and obesity. The project was directed to three groups: individuals on long-term sick leave (>180 days), young adults with DB, or recipients of social allowances. However, in this study, only the first group was included.
Study IV

In Study IV, young adults aged 19-29 years with disabilities resulting in reduced ability to carry out or maintain a job were invited to participate in the study, which was conducted alongside a vocational rehabilitation project (i.e. intervention). The inclusion criteria for participation in the project were: aged 19-29 years with a disability, unemployed, a need for involvement with at least two of the cooperating authorities (the SSIA, the SPES or the municipalities) and consent to participate in the project and the study. The criteria for benefits from the social security system were: at least 6 months of sickness benefits, DB or social allowances. The exclusion criteria were: serious physical illness or injury according to the criteria of the Swedish National Board of Health and Welfare [12], ongoing transition to DP or participation in another rehabilitation programme. A total of 249 young adults took part in the study. The gender distribution among the participants was 133 women and 116 men. The mean age was 24 years (SD=2.9). The most common education level was high school/university. The study comprised data from 249 young adults.

Study samples, characteristics (age, gender and country of birth) and number of subjects included in Studies I-IV are presented in Table 2.

Table 2. Sample, characteristics and number of subjects in Studies I – IV.

<table>
<thead>
<tr>
<th>Study</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample</td>
<td>Women on long term-sick leave</td>
<td>Women on long term-sick leave</td>
<td>Men and women on long-term sick leave</td>
<td>Young adults aged 19-29 years with disabilities</td>
</tr>
<tr>
<td>Number of subjects, n</td>
<td>337</td>
<td>401</td>
<td>14</td>
<td>249</td>
</tr>
<tr>
<td>Age, mean (SD)</td>
<td>48.7 (8.5)</td>
<td>48.7 (8.4)</td>
<td>47.2 (10.7)</td>
<td>24 (2.9)</td>
</tr>
<tr>
<td>Gender, n</td>
<td>Female</td>
<td>337</td>
<td>401</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Men</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Country of birth, n</td>
<td>Sweden</td>
<td>268</td>
<td>278</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Abroad</td>
<td>67</td>
<td>75</td>
<td>1</td>
</tr>
</tbody>
</table>
Data collection

The data in the present thesis was collected by self-reported questionnaires, registry data or individual interviews using open-ended questions. An overview of the variables and data collection methods used in Studies I-IV is provided in Table 3.

Table 3. Data collection methods in Studies I-IV.

<table>
<thead>
<tr>
<th>Study</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Questionnaires</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Country of birth</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Education level</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>General Self-Efficacy Scale (GSE)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Self-Rated Health (SRH)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>The Hospital Anxiety and Depression Scale (HADS)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Social support</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>View of the future</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weekly exercise, minutes</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Registry data</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time on sick leave, years (baseline)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of sick leave (baseline)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment status (baseline)</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transition to work/studies</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Individual interviews</strong></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Focus on:</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-how the participants felt about the intervention</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-experiences of encounters with the professionals working in the intervention</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**Demographic data.** Information about age, educational level and country of birth was collected through self-report questionnaires. Country of birth was dichotomised as ‘Born in Sweden’ or ‘Born abroad’. In Studies I and II, educational level was categorised as ‘Elementary school’, ‘High school’ or ‘University’. In Study IV, educational level was dichotomised as either ‘High school/university’ or ‘Elementary school not completed/elementary school’.

**Self-efficacy.** The General Self-Efficacy Scale (GSE) measures a person’s belief in their ability to handle various difficult demands in life and was developed by Schwarzer & Jerusalem (1995) (81). GSE consists of 10 statements and is reported on a four-point Likert scale ranging from 1 = ‘Not at all true’ to 4 = ‘Completely true’. Means were calculated as the sum of all
answers divided by the number of statements as long as no more than three statements were missing (82). The GSE has been translated into Swedish and has been validated (83). The internal consistency (Cronbach’s alpha) of the GSE was .94. To illustrate potential differences according to independent group characteristics in Study I, the reference value of 2.9 (the distribution of self-efficacy mean in a general population (82, 83) was used to categorise women into low self-efficacy if <2.9 and high if ≥2.9. However, in the linear regression analyses, the full self-efficacy scale was used as outcome variable, ranging from 10 to 40 points. In Study IV, the continuous measure of self-efficacy instead was dichotomised into low self-efficacy if ≤2.5 and high if >2.5. The cut-off was chosen because 2.5 was the median of self-efficacy in the study sample and also the mid-point of the range of self-efficacy.

Self-rated health. Self-reported health (SRH) was assessed using the Self-Rated Health survey item: ‘In general, how would you rate your health?’ with the response categories ‘Very good’, ‘Good’, ‘Neither good nor poor’, ‘Poor’ and ‘Very poor’ (84). The answer options were dichotomised as either ‘Good’ (‘Very good’ and ‘Good’) or ‘Less than good’ (‘Neither good nor poor’, ‘Poor’, and ‘Very poor’). In Study I, the category ‘Less than good’ was designated as ‘Non good’.

Anxiety and depression. The Hospital Anxiety and Depression Scale (HADS) were used for assessing anxiety and depression (85). HADS is responded to on a four-point Likert scale from 0 to 3. The items were summed in two subscales with scores ranging from 0 (no distress) to 21 (maximum distress). A score of 0–7 indicate a ‘non-case’, 8–10 a ‘possible case’ and 11–21 a ‘probable case’ of anxiety and depression. HADS has been translated into Swedish and validated (86). Missing values were handled by replacement of the individual’s mean scores when at least four questions for each subscale were answered.

Social support. Data about social support and trust were collected through three single questions: 1. ‘Do you have a close friend who you can contact and talk to about anything?’ with answer options ‘Yes’ or ‘No’. 2. ‘How many people are there in your surroundings that you easily can ask for things? For example people that you know so well that you can ask for help to bring in mail or watering the flowers?’ with answer options: ‘None’ (dichotomised as ‘None’) ‘1-2’, ‘3-5’, ‘6-10’, ‘11-15’ and ‘More than 15’ (dichotomized as ‘One or more’). 3. ‘One can trust most people?’ with answer options: ‘Do not agree at all’, ‘Disagree’ (dichotomised as ‘Do not agree’), ‘Agree’ and ‘Totally agree’ (dichotomised as ‘Agree’). The questions are study-specific and were inspired by questions in the National Public Health Survey of Sweden (87).

View of the future. Study-specific questions were used to investigate the view of the future with regard to assessment of health, perception of being restored before return to work and motivation to work. Three individual
questions were used. 1. ‘I believe that my health in 6 months will be…’ with answer answer options ‘Very good’ and ‘Good’ (dichotomised as ‘Good’) and ‘Neither good nor poor’, ‘Poor’ and ‘Very poor’ (dichotomised as ‘Non good’). 2. ‘I must be completely restored in order to return to work’, with answer options: ‘Totally agree’ and ‘Partly agree’ (categorized as ‘Agree’), ‘Unsure’ (categorised as ‘Unsure’), ‘Partly disagree’ and ‘Totally disagree’ (categorised as ‘Do not agree’). 3. ‘I am motivated to return to work’, with answer options ‘Totally agree’ and ‘Partly agree’ (categorized as ‘Agree’), ‘Unsure’ (categorised as ‘Unsure’) and ‘Partly disagree’ and ‘Totally disagree’ (categorised as ‘Do not agree’).

Weekly exercise. Information about exercise was collected through the question, ‘How much time do you spend on daily exercise in a normal week, such as walks, cycling or gardening?’ with answer options according to a seven-point scale from 1 = ‘0 minutes/no time’ to 7 = ‘more than 300 minutes’. The variable was dichotomised into ‘150 minutes or less’ (‘0 minutes/no time’, ‘30-60 minutes’, ‘60-90 minutes’, ‘90-150 minutes’) or ‘150 minutes or more’ (‘150-300 minutes’ and ‘more than 300 minutes’). The question is used in Swedish health care within the work of disease prevention, according to the Swedish National Board of Health and Welfare’s National Guidelines (88).

Registry data
Information regarding Time on sick leave, Level of sick leave, Employment status, and Transition to work/studies was collected from the SSIA. Level of sick leave was dichotomised as ‘Full-time’ or ‘Part-time’. The status regarding employment was dichotomised as ‘Employed’ or ‘Unemployed’. In Study IV, data on employment status was categorised into: ‘no transition to work or studies’, ‘transition to studies’, and ‘transition to work’. Transition to studies included all forms of studies, e.g. high school, post-secondary education, and full-time or part-time university. Transition to work included any kind of work activities e.g. job training (training for certain tasks without requiring performance), traineeships (trying out work at a workplace for occupational orientation), and part-time or full-time employment with wages or benefit
Individual interviews
In Study III, an interview guide was used, see Table 4.

Table 4. Interview guide used in Study III.

<table>
<thead>
<tr>
<th>Open-ended questions used in the interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>How has the reception in the project been? (e.g. information, treatment, availability)</td>
</tr>
<tr>
<td>What do you think about the activities offered in Dirigo? (e.g. individual planning, team meeting, wellness activities, guidance for study, job training)</td>
</tr>
<tr>
<td>What were your goals in participating in the project?</td>
</tr>
<tr>
<td>What do you need for these goals to be achieved?</td>
</tr>
<tr>
<td>Does the project meet the needs you have for achieving your goals?</td>
</tr>
<tr>
<td>What do you think is missing in Dirigo?</td>
</tr>
<tr>
<td>What do you think about your opportunities to start work or study?</td>
</tr>
<tr>
<td>What does your other network look like – is there a network-and-Dirigo collaboration?</td>
</tr>
<tr>
<td>What do you want to convey that I have not asked about?</td>
</tr>
</tbody>
</table>

Procedures

Studies I and II

The participants were followed up with postal questionnaires at pre-treatment in Study I, and at pre-treatment, 6 months and 12 months in Study II. In both Study I and Study II, baseline data were gathered from the SSIA’s register with information about participants’ time for ongoing sick leave, level of sick leave and employment status.

A total of 1,305 women, identified by the SSIA, were expected to reach their maximum number of paid sick leave days within a certain length of time between 2010 and 2012, according to the new regulations within the social insurance. An invitation letter was sent to the 1,009 women who fulfilled the inclusion criteria and had no exclusion criteria. Of those invited, 422 gave their written informed consent to participate in the vocational rehabilitation project. Eight women were excluded due to exclusion criteria after medical assessment (information not revealed by sick leave certificate) and 13 due to ethics (i.e. inclusion before ethical approval).

The project consisted of two phases. This change was due to an extension of the TEAM and control group after 1 year. However, in the second phase, the ACT intervention was omitted due to reduced inflow of participants in the study and a larger attrition rate among the participants in the ACT intervention group. In the first phase, 308 women were randomised into one of the following conditions: a) multidisciplinary team intervention (TEAM) (n=102), b) psychological treatment with acceptance and commitment therapy (ACT) (n= 102) or c) control group (n=104). In this phase, the partici-
pants had an equal chance of being allocated to any of the three groups. In a
second phase, which was due to an extension of the study after one year, 93
women were randomised into one of the following conditions: a) TEAM
\((n=59)\) or b) control group \((n=34)\). In this phase, two-thirds of the partici-
pants were randomised to the TEAM group and one-third to the control
group. The SSIA was responsible for the randomisation.

In Study I, the non-responders to the pre-treatment questionnaire \((n=46)\) and
to the GSE \((n=18)\) were excluded, resulting in a final sample of 337 women.
Study II (which included the non-responders at pre-treatment questionnaires
and the GES) resulted in 401 women in the final sample, allocated to TEAM
\((n=161)\), ACT \((n=102)\) and control \((n=138)\). The study and the data collection
took place from April 2010 to January 2012.

The interventions
The TEAM intervention consisted of an assessment of a multidisciplinary
team with a subsequent multimodal intervention and the second intervention
consisted of sessions with ACT. Both interventions were introduced when
the participants had 3-4 months left to the date when they were expected to
reach their maximum time in the social insurance and thereby would be
transferred to the SPES. The length of the two interventions was individual-
ised and could continue over a 12-month period. All participants in both the
TEAM and ACT interventions received cooperation between the SSIA and
SPES. A designated contact person (a team member in the TEAM group or a
psychologist in the ACT group) participated and took part in the meetings
along with the participant.

Multidisciplinary team
The multidisciplinary team included a physician, an occupational therapist, a
social worker and a psychologist. Each of the TEAM members met the par-
ticipants separately and performed an assessment of their need for support
and rehabilitation based on their professional expertise. Thereafter, the
TEAM members discussed, without the participant, adequate rehabilitation
actions based on the previous assessments in order to optimise the individu-
al’s possibility for RTW. The purpose was to develop an individualised re-
habilitation plan with suggested interventions. The TEAM participants had
the possibility to receive ACT if the TEAM proposed it. Further, each partic-
ipant in the TEAM was given a contact person (one of the TEAM members)
who presented the rehabilitation plan to them after the TEAM meeting. The
participants were free to accept either the whole rehabilitation plan or parts
of it. See Figure 4 for the assessment and rehabilitation process within the
TEAM intervention.
To follow up, synchronise actions and evaluate the rehabilitation, the TEAM held meetings every week. The participants’ mean number of meetings with the various TEAM members was: psychologist 5.0 (SD=6.6), physiotherapist/occupational therapist 2.0 (SD=4.1), physician 1.0 (SD=1.2) and social worker 1.0 (SD=3.5). All TEAM members were introduced in ACT, team training and education in motivational interviewing (MI), a communication technique aimed at strengthening an individual’s motivation and commitment to change (89).

After the extension of the study (phase 2), a physiotherapist was added to the TEAM and the assessments were limited to performance by a physician and a physiotherapist instead of all TEAM members. No differences were observed in self-efficacy at pre-treatment between the two TEAM groups, i.e. before and after the extension.

**ACT intervention**

The other vocational rehabilitation intervention was a unimodal rehabilitation which included ACT carried out by psychologists. ACT is a type of cognitive behavioural therapy (CBT) (90). CBT is based on learning theory, i.e. how human behaviours are formed in interaction with the environment, but also in cognitive theory that is based on how thoughts affect emotions and behaviours (91). The intention with ACT is to change the individuals’ attitudes to their problems/difficulties based on three main principles: mindfulness, acceptance and fundamental values. Barriers that create limitations in the individual’s life may thereby be removed (90). The participants in the ACT group only received treatment with ACT. The ACT sessions could take place at the rehabilitation clinic or in the participant’s home, work or other places (also possible for the participants in the TEAM intervention). However, most of the sessions took place at the clinic. The mean numbers of the participants’ ACT sessions with a psychologist was 8.0 (SD=6.0). See Figure 5 for the ACT intervention.
Controls
The control group did not receive any collaboration meeting support and went through the usual procedures when transferred from the SSIA to the SPES and was followed with the same questionnaires as the intervention groups and at the same time points (i.e. pre-treatment, 6 months and 12 months).

Registry data were received for all three groups, by the SSIA in connection with the inclusion in the study.

Study III
The present study was a part of the evaluation of a vocational rehabilitation intervention study (the Dirigo project). The participants included in this study were selected from the intervention, and asked by the project professionals if they wanted to participate in an interview. The participants were chosen purposively. The professionals were told to ask both women and men of various ages in order to obtain a variation in the sample.

In total, 14 open-ended face-toface interviews were conducted with the study participants between May and November 2013. The interviews were 20-60 minutes long and were audio-recorded and transcribed by an independent transcription service. The interviews were carried out by the authors (Å.A. and K.L.) and were held in the intervention’s two sites. Recruitment of respondents ended when data saturation was deemed to be reached.

The intervention
The unique features of the intervention, compared to Swedish regular practice, were the direct collaboration between the SSIA, the SPES and the municipality concerned, the individually tailored interventions and the motivational interviewing (MI) approach. The Dirigo project has been described in detail in a previous publication focusing on organisational and professional aspects (92). The professionals shared workplaces in two dedicated offices and worked together in pairs with a shared responsibility for each participant.

The professionals worked according to the principles of MI (89), which was used as a guiding tool in their meetings with the participants. MI is a communication technique aimed at strengthening an individual’s motivation and commitment to change and is based on partnership, acceptance, com-
passion and evocation. The partnership should be based on cooperation between the professional and the individual and the individual should be seen as an expert on herself. Acceptance includes seeing the value of every human with the endeavor to understand the individual’s perspective, showing empathy, respecting the individual’s autonomy and confirming the individual’s strengths. Compassion is shown by actively trying to help the individual feel good, with a focus on their needs. Evocation is about eliciting the individual’s own motivation for change. Another important component in MI is active listening (89). MI was used as a tool to improve both cooperation between individuals and professionals, i.e. the principle of partnership, and to improve the individual and professional communication and alliance, i.e. the principles of acceptance and compassion. MI was also used as a means to strengthen individuals’ motivation to RTW, i.e. the principle of evocation.

The professionals worked closely with the participants, supported their individually tailored rehabilitation process and contacts with possible employers. The professionals had relatively few cases (30-40) compared to regular practice (over 100), which allowed the professionals to spend more time with the participants and provided space for flexibility in the handling. For example the professionals could hold meetings with the participants in other locations than the office and accompany the participant to various meetings according to the vocational rehabilitation plan.

Study IV

In this study, the participants took part in a vocational rehabilitation intervention with the aim of increasing the possibilities for unemployed young adults with disabilities aged 19-29 to enter the labour market or begin studies. Potential participants for the vocational rehabilitation intervention were identified by the SSIA through registry data and through professionals (supervisors) working within the SSIA, SPES and municipality. The potential participants received an invitation letter with information about the vocational rehabilitation and the study by mail or in personal meetings with the SSIA, the SPES or the municipality. Participants who consent to participate in the intervention and the study were asked to respond to a questionnaire at the initial meeting with the professionals working in the intervention. Questionnaire data were collected from September 2012 to June 2014. Registry data about participant’s status at the end of their participation in the vocational rehabilitation project were received from the SSIA.

The intervention

The professionals from the SSIA, the SPES and the municipalities working within the intervention worked together in teams with the participants to support them during the time for the intervention. The aim of the intervention was to increase the participant’s possibilities for transition to work or
studies. The intervention was individually tailored. Each individual had their own action plan and could receive activities and courses based on their own needs and goals.

Data analysis

Quantitative data

In all the statistical analyses, descriptive statistics were used for characteristics. Ordinal data and categorical data are presented by frequencies (n) and proportions (percent). Continuous data are summarised with means and standard deviation (SD). Pearson's Chi-square (Chi²-tests) was used to test for differences between groups for categorical and ordinal variables. To test for differences in means in continuous variables between groups, independent t tests and one-way ANOVA were used. Data were analysed using the Statistical Package for the Social Sciences (SPSS version 21.0 and 22.0; IBM Corporation, Armonk, New York, USA).

In Study IV, analyses were also carried out using R version 3.2.0 and the packages 'nnet' (93) and 'mice' (94). All tests were two-sided and the significance level was set at p≤0.05, with the exception of Study II. In Study II, the level of significance was adjusted with the Bonferroni correction and because two tests were carried out, significance level was set to p-value ≤ 0.025 (0.05/2 = 0.025). For an overview of the analyses in the quantitative data; see Table 5.

Table 5. Overview of the analyses of data in Studies I, II and IV.

<table>
<thead>
<tr>
<th>Study</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Descriptive statistics, one-way ANOVA, Chi²-test, Univariate linear regression, Multivariate linear regression</td>
</tr>
<tr>
<td>II</td>
<td>Descriptive statistics, one-way ANOVA, Chi²-test, Univariate linear regression and Multivariate linear regression, with and without multiple imputation, Linear mixed model</td>
</tr>
<tr>
<td>IV</td>
<td>Descriptive statistics, t tests, one-way ANOVA, Chi²-test, Multinomial logistic regression, Sensitivity analysis</td>
</tr>
</tbody>
</table>

Study I

To examine associations between variables, regression analyses were performed. Simple linear regression analyses were performed to assess the unadjusted associations between different independent variables (age, country of birth, education level, employment status, time for ongoing sick leave, level of sick leave, view of the future, social support, SRH and HADS: anxi-
ety and depression) and self-efficacy (as dependent variable). In linear regression, the dependent variable should be of interval scale whereas the independent variables can be of any scale (95). The GSE scale can be treated as an interval scale (96). Multiple linear regression analyses were used to fit different models of the independent variables and their adjusted associations with self-efficacy. The following multivariate models were fitted: model 1 = age, country of birth, education level, employment status, period of ongoing sick leave and level of sick leave; model 2 = model 1 + view of the future: health in 6 months, must be restored in order to return-to-work, motivated to return-to-work + social support: close friend, get support from someone, trust in people; model 3 = model 2 + health: self-rated health, HADS: anxiety and depression. Results are presented with 95% confidence intervals (CI). A collinearity test showed that no multicollinearity existed.

**Study II**

Simple linear regressions were used to study associations between the independent variables (group allocation, age, employment status, time on sick leave, self-efficacy at pre-treatment and HADS: anxiety and depression) and the dependent variable self-efficacy at 12 months. Multiple linear regression analyses were used to fit models of adjusted associations between independent variables and self-efficacy at 12 months. The following multivariate models were used: model 1 = group allocation, model 2 = model 1 + age, employment status and time on sick leave, model 3 = model 1 + model 2 and self-efficacy at pre-treatment and HADS. Dummy variables were created for the two intervention groups: TEAM (TEAM coded as 1 and ACT + Control coded as 0) and ACT (ACT coded as 1 and TEAM + Control coded as 0). To handle missing data in self-efficacy, due to loss at follow-up, multiple imputation was carried out and 100 data sets with imputed values were generated. The analyses excluded 52 participants who did not provide any data on self-efficacy. A collinearity test showed that no multicollinearity existed.

Linear mixed model was used to evaluate whether the interventions lead to increased self-efficacy twelve months later, taking all three measure points (pre-treatment, 6 months and 12 months) and missing data on self-efficacy into account. The advantage of linear mixed models is that they are able to handle missing data that often arise in longitudinal data, providing the ability to take into account the influence of other covariates on the dependent variable over time (97). The intercept was specified as random effect with an unstructured covariance matrix.

The analyses were performed adjusting for age, employment status, time on sick leave and HADS: anxiety and depression. The analyses were based on the intention to treat. Due to the extent of missing values in country of birth, education level and level of sick leave, these were not included in the linear regression analysis and the linear mixed model analysis. Results of the associations are presented with 95% confidence intervals (CIs) and B-values.
Study IV
Multinomial logistic regression was carried out to estimate the association between self-efficacy (independent variable) and employment status (as a dependent variable): ‘transition to studies’, ‘transition to work’, and ‘no transition to work or studies’, adjusting for demographic (age, country of birth, education level) and health characteristics (SRH and weekly exercise). This analysis method is used to determine which variables affect the probability of an event. The dependent variable must be dichotomous, i.e. two categories, although the independent variable can be of any scale (95). Three models were estimated. Model 1 was a crude model providing an association between self-efficacy and employment status. Model 2 included potential demographic confounders. Model 3 included demographic and health-related potential confounders. Organisation groups (the SSIA, SPES, municipalities) were not included in Models 1 up to and including Model 3 due to no differences in characteristics between the participants in the three organisations, except for age and education level. Associations are presented as estimated odds ratios (OR) with 95% confidence intervals (CI).

Multiple imputations (MI) by chained equations were carried out to study the influence of missing data. All confounders, exposure and outcomes were included linearly in the imputation models (polytomous or logistic regressions models). The imputation was carried out 100 times. Thereafter, a sensitivity analysis was performed using a tipping point analysis (98).

Qualitative data
Study III
Open-ended interviews were carried out between May to November 2013. Data were analysed using inductive content analysis with a manifest (i.e. what is pronounced) approach according to Elo & Kyngäs (99). The analyses were performed in the following steps:

1. The interviews were read through to focus on the issues and to get a sense of the whole text.
2. Meaning units answering the research question were identified, condensed and coded.
3. Data were classified as belonging to a specific group, and were then subsumed in different subcategories. Through abstraction of the content within the subcategories, they were grouped into generic categories and finally into one main category (99). An example of the content analysis is presented in Table 6.
Table 6. Example of the content analysis process

<table>
<thead>
<tr>
<th>Condensed meaning unit</th>
<th>Sub category</th>
<th>Generic category</th>
</tr>
</thead>
<tbody>
<tr>
<td>I really have this anxiety about taking decisions, especially taking wrong decisions. But the more I talked to them (the professionals), the more it felt like this is right… (no. 8)</td>
<td>Personal and emotional support</td>
<td>Opportunities for receiving various dimensions of support</td>
</tr>
<tr>
<td>… I have felt that they care, and as I mentioned earlier I am not just a number in the statistics … (no. 5)</td>
<td>Overall treatment</td>
<td>Good overall treatment by the professionals</td>
</tr>
</tbody>
</table>

The analyses was performed by Å.A., C.S. and K.L. The three steps were carried out independently but discussions concerning the coding and categorisations were held regularly during the analysis process until consensus was reached.
Ethical considerations

Studies I-IV

The studies were performed in accordance with the ethical standards of the WMA Declaration of Helsinki (100) and according to the rules and guidelines in Codex (101). The participants received written information about the studies, and were informed that participation was voluntary and that they could withdraw from the study at any time. All participants gave their informed consent to take part in the studies. Individuals who were interviewed in Study III gave their permission for the interviews to be recorded before they took place.

Studies I and II were approved by the Regional Ethical Review Board in Uppsala, 2010/088 and 2010/088/1. Study III and Study IV were approved by the Regional Ethical Review Board in Linköping; 2012/115-31 and 2012/208-31. The benefits and usefulness of the studies were considered to outweigh the risks. All studies are presented at group level and guarantee confidentiality.

Studies I and II were supported by [REHSAM], under Grant [RS2011/010], a research programme financed by the Swedish Ministry of Health and Social Affairs, the SSIA. Study III and Study IV were partly financed by the European Social Fund, ESF, the SSIA, the SPES, and by the municipalities. The funding organisations had no role in the planning, execution or analysis of any of the four studies.
Findings

Study I
Self-rated health, (SRH), (84) was reported as ‘Non-good’ by 90.6% of the women, 54.0% of the women were probable cases of anxiety, and 37.9% probable cases of depression. Furthermore, the mean value of self-efficacy scores was generally low (2.3) and the mean scores for self-efficacy were lower in foreign-born women than in native Swedish women (1.90 vs. 2.40, F =33.4, p <0.001) and in unemployed women compared with employed women (2.17 vs. 2.37, F =6.38, p<0.012). There were no differences in self-efficacy mean when comparing different age groups (25-35, 36-50 and 51-65). Among women with lower self-efficacy, there was a higher proportion of women who: were born abroad, had low motivation or were uncertain about returning to work, had no close friends, and reported distrust in people. Women with lower self-efficacy also reported worse self-rated health, and higher anxiety and depression compared to women with higher self-efficacy.

Self-efficacy was associated with: 1) several sociodemographic factors (country of birth, employment status and level of sick leave), 2) view of the future (health in 6 months, must be restored in order to RTW, motivated to RTW, 3) social support (close friend, get support from someone, trust in people) and 4) health-related factors (SRH, HADS anxiety and HADS depression). The fully multivariate linear regression model, which included mental health factors together with all measured factors, showed that anxiety and depression were the only principal predictive factors and explained 46% of the variance in self-efficacy. There were no associations found between self-efficacy and age, educational level and time of ongoing sick leave; see Table 7.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Crude</th>
<th>Model 1 (n=253)</th>
<th>Model 2 (n=223)</th>
<th>Model 3 (n=220)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.03(-.12 -.05)</td>
<td>-.05(-.15 -.04)</td>
<td>.01(-.10 -.08)</td>
<td>-.05(-.14 -.03)</td>
</tr>
<tr>
<td>Country of birth&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-5.08(-6.81- -3.35)**</td>
<td>-4.84(-6.79--2.88)**</td>
<td>-2.75(-4.76-.74)**</td>
<td>-2.25(-2.08 - 1.58)</td>
</tr>
<tr>
<td>Education level&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1.01(-.08-2.09)</td>
<td>.82(-.27-1.91)</td>
<td>.13(-.93-1.19)</td>
<td>.53(-.40 - 1.46)</td>
</tr>
<tr>
<td>Employment status&lt;sup&gt;c&lt;/sup&gt;</td>
<td>-.196(-3.48- -.43)*</td>
<td>-.70(-2.58-1.18)</td>
<td>-.39(-2.18 - 1.39)</td>
<td>-.03(-1.53 - 1.59)</td>
</tr>
<tr>
<td>Time for ongoing sick leave (yrs)</td>
<td>-.12(-.35-.10)</td>
<td>-.18(-.44-.08)</td>
<td>-.17(-.41-.08)</td>
<td>-.12(-.34-.09)</td>
</tr>
<tr>
<td>Level of sick leave&lt;sup&gt;d&lt;/sup&gt;</td>
<td>-2.89(-4.38-.140)**</td>
<td>-2.04(-3.81 -.28)**</td>
<td>-.93(-2.66-.80)</td>
<td>-.32(-1.86-1.22)</td>
</tr>
<tr>
<td><strong>View of the future &amp; social support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health in 6 months&lt;sup&gt;e&lt;/sup&gt;</td>
<td>2.37 (1.56-3.18)**</td>
<td>1.04 (.13-1.96)*</td>
<td>.20(-.72 - 1.13)</td>
<td>.99(.40 - 1.59)**</td>
</tr>
<tr>
<td>Must be restored in order to return to work&lt;sup&gt;f&lt;/sup&gt;</td>
<td>.29(-.32 .90)</td>
<td>.17(-.37 -.71)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Motivated to return to work&lt;sup&gt;g&lt;/sup&gt;</strong></td>
<td>1.66(1.12-2.20)**</td>
<td>.63(-.01 - 1.26)</td>
<td>.26(-.30 -.81)</td>
<td></td>
</tr>
<tr>
<td>Close friend&lt;sup&gt;h&lt;/sup&gt;</td>
<td>-2.59(-4.07 - 1.11)**</td>
<td>-.46(-1.99 - 1.08)</td>
<td>-.16(-1.50-.79)</td>
<td></td>
</tr>
<tr>
<td>Get support from someone&lt;sup&gt;i&lt;/sup&gt;</td>
<td>2.11(1.46-2.75)**</td>
<td>.60(-.12 - 1.33)</td>
<td>.15(-.50-.79)</td>
<td></td>
</tr>
<tr>
<td>Trust in people&lt;sup&gt;j&lt;/sup&gt;</td>
<td>3.26(2.39-4.12)**</td>
<td>1.98(94 - 3.02)**</td>
<td>.84(-.14 - 1.81)</td>
<td></td>
</tr>
<tr>
<td><strong>Health</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SRH&lt;sup&gt;k&lt;/sup&gt;</td>
<td>3.11(2.36-3.87)**</td>
<td></td>
<td>.12(-.86-1.11)</td>
<td></td>
</tr>
<tr>
<td>HADS anxiety</td>
<td>-.81(-.92-.70)</td>
<td></td>
<td>-.42(-.60 -.25)**</td>
<td></td>
</tr>
<tr>
<td>HADS depression</td>
<td>-.91(1.03-.79)**</td>
<td></td>
<td>-.41(-.61 -.20)**</td>
<td></td>
</tr>
<tr>
<td><strong>Adjusted R&lt;sup&gt;2&lt;/sup&gt;</strong></td>
<td>.14</td>
<td>.27</td>
<td>.46</td>
<td></td>
</tr>
</tbody>
</table>

Note: a) Sweden (ref.) vs abroad, b) Elementary (ref.), high school, university, c) Employed (ref.) vs unemployed, d) Part-time (ref.) vs full-time, e) Very poor (ref.), poor, neither good nor poor, good, very good, f) Totally agree (ref.), partly agree, unsure, partly disagree and totally disagree, g) Totally disagree (ref.), partly disagree, unsure, partly agree and totally agree, h) Yes (ref.) vs no, i) None (ref.), 1-2, 3-5, 6-10, 11-15 and more than 15, j) Do not agree at all (ref.), disagree, agree and totally agree, k) Very poor (ref.), poor, neither good nor poor, good, very good, l) Hospital anxiety and depression scale, each subscale range: 0-21

Model 1=Age, country of birth, education, employment, level of sick leave
Model 2=Model 1+View of the future + Social relations
Model 3=Model 2 + Health

*=p<.05, **=p<.01
There were no differences found in the sociodemographic variables included in the analyses between responders and non-responders other than a higher proportion of unemployment among non-responders. There were a small number of unanswered questions in each measure, mainly about education and sick leave (internal missing values 5%). No differences were observed in self-efficacy for non-responders of education (p <0.722) and sick leave (p <0.103) compared with responders to these questions.

Study II

No differences were seen in analysed variables between the study groups (TEAM, ACT and control) before the intervention started or in self-efficacy at pre-treatment. No differences between responders and non-responders were seen regarding the sociodemographic data except for a higher proportion of unemployment and participants on full-time sick leave among the non-responders. However, some differences in pre-treatment data were found between responders and non-responders of the 12-month follow-up of self-efficacy, showing that non-responders had lower self-efficacy at pre-treatment (p=0.003). Non-responders also reported higher levels of anxiety (p=0.004) and depression (p=0.013) compared to responders. There was also a higher proportion of participants who were born abroad (p=0.001) and who were on full-time sick leave (p=0.002) among non-responders compared to responders.

Three groups of diagnoses were classified: pain (38%), psychiatric (31%) and pain and psychiatric combined (31%). At pre-treatment, the mean value of self-efficacy was 2.30 (range 1 to 4) for the three groups in total. The study showed that the women in the TEAM intervention increased self-efficacy mean value from 2.29 to 2.74 (see Figure 6). The adjusted linear regression model, which included: group allocation (TEAM, ACT or control), sociodemographics (age, employment status, time on sick leave), self-efficacy pre-treatment, and HADS anxiety and HADS depression, showed that TEAM intervention increased self-efficacy at 12 months (B=0.25, 95% CI, 0.10 to 0.41). ACT intervention had no effect on self-efficacy at 12 months (B=0.02, 95% CI, -0.16 to 0.19) compared to the control group. The results in the adjusted model also showed that higher self-efficacy at pre-treatment was associated with a higher level of self-efficacy at 12 months (B=0.68, 95% CI, 0.54 to 0.81). These results were confirmed in the analyses with imputed data; see Table 8.
Table 8 Linear regressions: associations between group, demographics, self-efficacy at pre-treatment, HADS and self-efficacy at 12 months, B-values and 95% confidence interval (CI) based on original data and imputed data

<table>
<thead>
<tr>
<th></th>
<th>Original data</th>
<th>Imputed data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Crude Model 1</td>
<td>Crude Model 2</td>
</tr>
<tr>
<td><strong>Group</strong></td>
<td>n=254</td>
<td>n=254</td>
</tr>
<tr>
<td>TEAM(^a)</td>
<td>0.23 (0.03, 0.44)*</td>
<td>0.23 (0.03, 0.43)*</td>
</tr>
<tr>
<td>ACT(^b)</td>
<td>0.11 (-0.12, 0.34)</td>
<td>0.10 (-0.12, 0.33)</td>
</tr>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.00 (-0.01, 0.01)</td>
<td>-0.01 (-0.02, 0.00)</td>
</tr>
<tr>
<td>Employment status(^c)</td>
<td>0.20 (0.02, 0.38)</td>
<td>0.20 (0.01, 0.39)</td>
</tr>
<tr>
<td>Time on sick leave (y)</td>
<td>-0.02 (0.04, 0.01)</td>
<td>-0.01 (-0.04, 0.01)</td>
</tr>
<tr>
<td>Self-efficacy, pre-treatment</td>
<td>0.71 (0.61, 0.81)*</td>
<td>0.68 (0.54, 0.81)*</td>
</tr>
<tr>
<td><strong>HADS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>-0.05 (-0.07, -0.04)*</td>
<td>0.01 (-0.01, 0.03)</td>
</tr>
<tr>
<td>Depression</td>
<td>-0.07 (-0.08, -0.05)*</td>
<td>-0.02 (-0.04, 0.00)</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.01</td>
<td>0.03</td>
</tr>
</tbody>
</table>

\(^a\)TEAM =1, ACT+Control=0.  
\(^b\)ACT = 1, TEAM+Control = 0.  
\(^c\)Unemployed (ref.) versus employed.  
*=p≤0.025.
The analyses using linear mixed models, taking missing data and all of the three measurement points of self-efficacy into account, also confirmed the results from the linear regressions. These analyses were performed with adjustment for age, employment status, time on sick leave and HADS.

![Self-efficacy over time](image)

**Figure 6.** Mean value of self-efficacy over time, pre-treatment, 6 months and 12 months, in the TEAM group, ACT group and control group.

**Study III**

The qualitative data analysis resulted in the main category: *Overall positive experiences* with the rehabilitation project and encounters with the professionals working in it. Their positive experiences are based on the following generic categories: 1. *Opportunities for receiving various dimensions of support* 2. *Good overall treatment by the professionals* 3. *Satisfaction with the working methods of the project* and 4. *Opportunities for personal development*. The relationship between the main category and the generic categories are illustrated in Figure 7.
1) **Opportunities for receiving various dimensions of support**

The first generic category consisted of three subcategories: *Personal and emotional support*, *Work-focused support* and *Procedural support*.

Personal and emotional support was characterised by the support the participants received from the professionals in finding balance in life, taking decisions and formulating goals. This kind of support was perceived as important and created a sense of relief and the feeling of not standing alone in the process. Work-focused support reflected help from the professionals with mapping, coaching and finding and maintaining employment/studies or coordinating contact with various specialists. The professionals were described to follow up on the participants while they were undergoing job training. This gave the participants a sense of security in their new situation. Moreover, the participants could feel that the professionals wanted to help them to return to work. Procedural support mainly involved getting help to managing sickness benefits and making sure that this proceeded as it should. The professionals gave the participants information and answered their questions, which was reported to reduce worries.

“They [the professionals] were able to coach me a little, with finding work and such, so I think the support is good.” (no. 7)

2) **Good overall treatment by professionals**

The second generic category consisted of two subcategories: *Overall treatment* and *Being seen as individuals, believed in and treated respectfully*.

Overall treatment demonstrated that the participants were satisfied with the treatment by the professionals, which was described to be honest and open. Further, the professionals were described as being nice, caring and engaged in the participant’s situation, and as treating them well. This meant that the participants could feel relaxed with the professionals and have con-
fidence in them. The participants also perceived that the professionals kept their agreements, that they trusted the participants and that they were non-judgmental and non-accusatory and had an understanding of the participants’ situation and diseases. This gave the participants a sense of security and being cared for. Being seen, believed in and treated respectfully reflected that the participants felt that the professionals trusted them and that the participants did not have to feel questioned and feel that they needed to defend themselves. The professionals had an individual approach in their treatment, took the time to listen to the participants, were respectful and took the participants seriously.

“… it feels like being embraced a little bit; you can sit down and feel safe.” (no. 5)

There was also one participants who had negative experiences of his/her meetings with professionals, and felt ill-treated and not understood. However, after contact with the project manager, a new contact was appointed and this new situation worked out better.

3) Satisfaction with the working methods of the intervention

The third generic category consisted of five subcategories: High expectation for receiving help from the intervention, Cooperation between the participant and the authorities, Individually designed method, Accessible, continuous and frequent contact and The professionals were provided useful tools through the project.

High expectations for receiving help from the intervention were mainly consistent with participants’ perception at the initial meeting of the professionals as being unconditional. This gave high expectations for receiving help from the intervention, which was reinforced by the question from the professionals concerning what the participants needed help with. The participants trusted the professionals and hoped that the intervention would lead to something positive. All the participants perceived the intervention as so helpful that they desired this way of working to be implemented.

Cooperation between the participant and the authorities involved the close cooperation between the participants and the authorities, which produced a sense of being part of a team. The participants stated that this way of working together gave the professionals an understanding and an overview of the individual’s situation and gave the participants a sense of confidence. The working method improved the communication and enabled the participants to receive answers no matter which authority they asked questions. The cooperation among the various authorities (the SSIA, SPES and the municipality) was seen to increase the authorities’ capacity and was appreciated and perceived as giving the professionals a better understanding of each other’s
working methods. It also reduced the risk of the participants falling in between the authorities’ responsibilities.

[Before the project] “…the Public Employment Services sent me here and there, so it was such a juggling act with patients going from health care to the Public Employment Services, back and forth. Avoiding that and having two authorities working together is great; it couldn’t be better”. (no. 10)

The individually designed working method was customised according to the participants’ wishes, needs and conditions. The participants felt the professionals were there for them and took their needs into account, i.e. they adjusted the pace to suit the individual, and participants saw this way of working as unique. The professionals were perceived as making an effort to get to know the participants. They had personal conversations with the participants over time and could thereby observe their resources, needs and what occupations suited them. Accessible, continuous and frequent contact reflected the participants’ perception that the professionals were accessible and easy to keep in touch with. This contact with the same professionals over time was appreciated and produced a sense of security. The participants also felt like the professionals had more time for them compared with regular practice.

“There is a little bit more time here for working with…clients in a stronger way…and a better opportunity for returning to work”. (no. 14)

The professionals provided useful tools throughout the intervention, which were perceived to support the vocational rehabilitation. One example was the group activities, which were considered important by the participants since they provided opportunities to experience new activities.

4) The intervention provided opportunities for personal development
The fourth generic category consisted of two subcategories: 1) Increased self-awareness in and belief in one’s own ability and 2) Social contacts.

The self-awareness comprised changes in self-perception, learning to listen to themselves, seeing their self-worth and being aware of their own priorities. The participants expressed that they had learned to know themselves better. The mapping, i.e. compilation of the participant’s background, education, competence, goals, etc., had led to a clearer understanding of themselves and insight in what they wanted to work with, giving hope for finding a job. The intervention had given participants the opportunity to look for different kinds of jobs and to test their work capacity via job training. The establishment of new social contacts for some participants and the contact with the professionals had contributed to the insight that there were others in similar situations. This confirmation of not being alone in the situation produced a sense of ease.
“… yes, but I would like to do it, but I didn’t think it was possible [working with a particular profession], and they [the professionals] made me believe it was possible…” (no. 8)

Study IV

Within the study population, 133 (53.4%) were women and 116 (46.6%) were men. The mean age was 24 years (SD=2.9) and the most common reported education level was high school/university (55.9%). Almost two-fifths (39.0%) of the participants reported their health to be good and just under one third (32.1%) reported that they were exercising 150 minutes or more per week. The findings also showed that the mean score for self-efficacy for the total group was 2.5 (SD=0.64). There were no differences in mean score for self-efficacy between men and women. A higher number of participants with low self-efficacy (74.4%) reported worse self-rated health compared with participants with higher self-efficacy (47.1%), p<0.001. A higher level of self-efficacy was associated with increased odds for ‘transition to work’ (OR=2.37, p<0.05). This finding remained consistent when adjusting for possible confounders (demographic and health). A higher level of education was associated with ‘transition to work’ (OR=0.46, p<0.05), although this significant association was only found in the crude analysis (Table 9).
Table 9. Results of multinomial logistic regression analysis of factors associated to transition to work or studies, presented as odds ratio (OR) and 95% confidence interval (CI).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Transition to studies vs. No transition to work or studies</th>
<th>Transition to work vs. No transition to work or studies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1 Crude (n=213)</td>
<td>Model 2 Crude (n=208)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Model 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(n=208)</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy a</td>
<td>1.18 (0.56 – 2.50)</td>
<td>1.31 (0.60 – 2.83)</td>
</tr>
<tr>
<td>Demographic Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.93 (0.82 – 1.07)</td>
<td>0.93 (0.81 – 1.07)</td>
</tr>
<tr>
<td>Gender b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender b</td>
<td>1.58 (0.75 – 3.35)</td>
<td>1.42 (0.66 – 3.09)</td>
</tr>
<tr>
<td>Country of birth c</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Country of birth</td>
<td>2.36 (0.90 – 6.15)</td>
<td>2.54 (0.94 – 6.85)</td>
</tr>
<tr>
<td>Education d</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education d</td>
<td>1.25 (0.59 – 2.64)</td>
<td>1.07 (0.49 – 2.34)</td>
</tr>
<tr>
<td>Health SRH e</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health SRH e</td>
<td>0.82 (0.37 – 1.78)</td>
<td>1.21 (0.50 – 2.92)</td>
</tr>
<tr>
<td>Weekly exercise f</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weekly exercise f</td>
<td>1.59 (0.66 – 3.80)</td>
<td>1.68 (0.66 – 4.31)</td>
</tr>
</tbody>
</table>

Model 1=self-efficacy; model 2=model 1 + age, gender, country of birth, education; model 3=model 2 + SRH, Self-Rated Health, weekly exercise.

a Self-efficacy ≤2.5 (ref.) versus self-efficacy >2.5.
b Female (ref.) versus male.
c Sweden (ref.) versus abroad.
d High school/university (ref.) versus elementary school not completed/elementary school.
e Good (ref.) versus less than good.
f 150 minutes or more (ref.) versus 150 minutes or less.

*p < 0.05; **p < 0.01; ***p<0.001
The participants’ time in the project varied, with a mean time of 9.7 months (SD=4.4) and at the end of participation in the project 52 (23.6%) of the participants had started work, 35 (15.9%) had started studies, and 133 (60.5%) had begun neither work nor studies (see Table 10). Information about employment status was missing for 29 participants.

Table 10. The participants’ employment status at the end of the participation, by total (n=220) and by level of median self-efficacy.

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Self-efficacy ≤2.5</th>
<th>Self-efficacy &gt;2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td>No transition to work or studies</td>
<td>133 (60.5)</td>
<td>74 (67.3)</td>
<td>59 (53.6)</td>
</tr>
<tr>
<td>Transition to studies</td>
<td>35 (15.9)</td>
<td>18 (16.4)</td>
<td>17 (15.5)</td>
</tr>
<tr>
<td>Transition to work</td>
<td>52 (23.6)</td>
<td>18 (16.4)</td>
<td>34 (30.9)</td>
</tr>
</tbody>
</table>

The multiple imputation (MI) did not change any conclusions, i.e. the adjusted OR for self-efficacy in Model 3 is 2.14 (95% CI: 1.01, 4.57). A sensitivity analysis for the crude analysis of ‘transition to work’ was conducted as follows: 1. when those who transitioned to studies were excluded, the analyses showed that 36% transitioned to work among the participants with high self-efficacy, while 19% transitioned to work among the participants with low self-efficacy. This yielded a difference in transition to work of 17% (p<0.01) between the groups; 2. a tipping point analysis showed that transition to work was always larger in the high self-efficacy group, regardless of the imputed outcome pattern in the missing outcome data. Thus, the participants with high self-efficacy had a higher chance of transition to work, even if none of the participants with missing outcome data in the high self-efficacy group transitioned to work, and all participants with missing outcome data in the low self-efficacy group transitioned to work.
Discussion

Summary of findings

The overall aim of this thesis was to study the relationship between self-efficacy, individually tailored vocational rehabilitation and transition to work/studies. The main findings in this thesis showed that:

- General self-efficacy levels were low in women on long-term sick leave and in young adults with disabilities, especially in those with worse self-rated health. Self-efficacy levels were lower for women who were foreign-born, unemployed and reported having no close friend.

- The strongest predictors for low self-efficacy were anxiety and depressive symptoms.

- Assessment of a multidisciplinary team followed by an intervention increased the level of self-efficacy in women on long-term sick leave.

- Individuals on long-term sick leave had overall positive experiences of a vocational rehabilitation project and encounters with professionals working in it. The project was based on the following three main components: the direct collaboration between the SSIA, SPES and the municipalities, the individually tailored interventions; and the motivational interviewing approach.

- A higher level of self-efficacy was associated with increased odds for transition to work but not for studies in young adults with disabilities.

The results will be discussed in relation to previous studies and to the theoretical framework presented earlier in this thesis.
Generally low self-efficacy

Self-efficacy was generally low in women with a mean of sick leave duration of 7.8 years (Study I and Study II) and in young adults with disabilities (Study IV) as compared with that of the general population (82, 83). Although self-efficacy has been investigated in the area of vocational rehabilitation in recent decades, no corresponding studies have been found reporting self-efficacy in individuals on sick leave for such a long time.

Long-term sick leave is associated with negative effects on health (58, 59), as well as not being included in the labour market (56). Being on sick leave due to health problems, or not being able to find an employment due to disabilities makes individuals dependent on different welfare systems in order to support themselves. This may create stress and a feeling of not having full influence over one’s situation. According to the theory of self-efficacy, this may further worsen the individual’s health status in the long run (70). The association between health and self-efficacy is also shown in previous studies (63, 102).

Self-efficacy was lower in foreign-born women than in native Swedish women. A previous study, partly based on the same population, showed that the foreign-born women had overall poorer health compared to the native Swedish women (103). Further, a previous review showed that mental health is poorer in foreign-born populations, and that migrants from refugee countries had a higher prevalence of anxiety than native Swedes (104). Lower self-efficacy in the foreign-born women might be associated with their poorer health and could possibly be related to migration in some way.

The low self-efficacy in the young adults with disabilities (Study IV) indicates that there are other factors besides the health conditions that also affect self-efficacy, e.g. being employed may create a sense of belonging in the working society and participation in community activities has shown to be positively associated with self-efficacy (105). Employment can contribute to a sense of meaning and satisfaction in life and one’s professional role forms a part of one’s identity (106). Possible reasons for lower self-efficacy in the young adults in Study IV might be related to unemployment, experiences of exclusion, or that they may not participate in any community activities. This view is further supported by lower self-efficacy among unemployed women on long-term sick leave in the present thesis.

Predictive factors for self-efficacy

Factors that influence the level of self-efficacy are important to understand and measure in order to enhance self-efficacy in individuals involved in vocational rehabilitation. No previous studies have been found demonstrating predictive factors for self-efficacy in relation to vocational rehabilitation.
However, in Study I anxiety and depression were the only principal predictive factors of low self-efficacy in women on long-term sick leave, explaining the variance in self-efficacy. Previous studies have shown associations between anxiety and depression (HADS) and self-efficacy (107, 108) and one study showed that women and men with low self-efficacy, reported mental illness to a greater extent compared with those with higher self-efficacy (109). This indicates that mental health should be addressed in vocational rehabilitation, and suggests the importance of involving health care.

Increased self-efficacy in women on long-term sick leave

Previous studies have succeeded in increasing self-efficacy among individuals on sick leave for less than a year (110-113). This is in comparable to the increased self-efficacy among the women taking part in the TEAM intervention in the present thesis. The effect of the TEAM intervention can only be speculated on. The intervention was individually tailored, and based on a biopsychosocial perspective (i.e. included medical, psychological and social aspects) which individually or together may have been what affected self-efficacy. Since many factors are important for RTW, it is reasonable to believe that assessments from different views were advantageous to detecting what types of vocational rehabilitation efforts and support each individual needed. This way of working could possibly facilitate the discovery of different obstacles that may have hindered the participants’ rehabilitation process, mainly on a personal level, and thereby be worked with and possibly removed.

In addition, except for the involvement of the participants, the TEAM and ACT interventions also involved collaboration with other stakeholders, e.g. the SSIA, the SPES and in some cases an employer. Although these actors worked together toward a common goal, it is unclear how effective this was perceived to be according to the participants and if this had any impact on the participants’ self-efficacy. According to Loisel et al. (2013), different systems (i.e. the healthcare system, the personal system, the legislative system, the insurance system and the workplace system) influence the individual’s disability and can hinder or facilitate the RTW process (41, 114). Corbière et al. (2017) point out that it is important to identify factors involved in the different systems that the individuals perceive as affecting their abilities for RTW. Thus, how the individual estimates their ability (self-efficacy) to overcome obstacles related to the systems needs to be identified (114). A new measure, the Return to Work Obstacles and Self-Efficacy Scale (ROS-ES) has therefore been developed by Corbière et al. (114). The way of working in the Dirigo project (Study III) and in the TEAM and ACT interventions
(Study II) involving different authorities/professionals may increase the ability to overcome obstacles in the vocational rehabilitation process that is connected to the environment or the different systems.

Thoughts, motivation and emotions can affect self-efficacy (70). Thus, one way to increase self-efficacy by changing patterns of thoughts and feelings may be to use CBT interventions in vocational rehabilitation. This will also increase the likelihood of behaviour changes and the opportunity for transition to work. Previous research has shown positive effects on self-efficacy with CBT in women taking part in occupational rehabilitation (110). This increase in self-efficacy was beneficial for the participants regardless of whether they had low or high self-efficacy at baseline (110). Another study including individuals with mental illness on sick leave or individuals with a risk for sick leave who received psychotherapy also showed positive effects on self-efficacy (115). Further, clinical treatment including CBT, supportive treatment and psychoeducation has shown to increase self-efficacy (112) as well as behavioural- and problem-solving therapy (111). Overall, this suggests that it is possible to strengthen self-efficacy with psychological efforts. However, no increase in self-efficacy was seen among the women taking part in the ACT intervention (Study II), and they may have needed individually tailored interventions combined with ACT.

Overall experiences with a vocational rehabilitation project and encounters with professionals

Individuals on long-term sick leave had overall positive experiences of a vocational rehabilitation project and encounters with professionals (Study III). The participants experienced that the working method in the project, with cooperation between the authorities, gave the professionals the opportunity to spend more time with each individual compared with regular practice. Further, the participants had regular contact with the professionals, who were expressed to have a high level of availability. This facilitated the development of an appropriately individualised plan for rehabilitation. The development of an RTW plan has also shown to be useful in a previous study (116). The participants in Study III were involved in their vocational rehabilitation process, which has shown to be important for RTW (117). Furthermore, the close cooperation between the individual and authorities during the vocational rehabilitation process has been shown in a previous review of Rinaldo and Selander (118) to facilitate RTW. The review showed that job training, a job coach or a person who coordinated the RTW process were success factors for RTW (118). The participants in Study III had the opportunity for job training in the project, and the professionals filled the roles of both job coaches and coordinators. The overall good treatment by
the professionals gave the participants a sense of confidence in their encounters with them. The participants expressed that the professionals were caring, that their treatment was respectful and that they took the participants seriously and took their time to listen to them. Earlier studies also show the importance of being listened to (119, 120). The qualities of the professionals, including listening and having an encouraging and supportive approach, are important factors for the individuals’ motivation for RTW and for dealing with difficulties during the rehabilitation process (119). The quality of encounters also influences the individuals’ self-perception and their expectations of being able to work (119, 121), as well as their ability to communicate information of importance to the assessment of their work ability, difficulties and resources (122).

The participants expressed that their encounters with the professionals strengthened their self-awareness, self-worth and belief in their ability to start working or studying. Self-awareness (i.e. identity, resources, will and values) has been found to be a facilitator for RTW after sick leave (123). Individuals’ expectations and beliefs about being able to work can be affected by the interactions that occur between the individual and the professionals during the vocational rehabilitation (119). Thus, it is possible that the interaction that occurred between the participants and the professionals, in combination with the working method in the project, may have affected the participants’ self-efficacy not only in relation to transition to work but also in general. Although we do not know if the participants have begun work or studies, their personal development and belief in their ability (self-efficacy) to start working may have increased their opportunities for transition to work.

In Study III, MI was used in the communication with the participants, to improve cooperation between the professionals and the participants and to increase the participants’ motivation for transition to work, if needed. One of the components in MI is to support self-efficacy (124). MI was also used in the communication in the meetings between the professionals and the participants in the TEAM group. However, as it is uncertain to what extent MI was applied, it is not possible to know if MI had any influence on the increased self-efficacy that was found in the TEAM group.

Study I showed that having social support, in terms of having a close friend, was associated with higher self-efficacy. The importance of social support was also central in Study III.

The regular contact with the professionals in Studies II and III was a way to offer social support to the participants during the vocational rehabilitation. Previous studies also show that different kinds of support are associated with higher self-efficacy (125-127) and are important during the rehabilitation process and for RTW (12). These findings indicates that social support needs to be integrated in vocational rehabilitation.
Higher self-efficacy supported transition to work in young adults with disabilities

Higher self-efficacy was associated with increased odds for transition to work in unemployed young adults with disabilities (Study IV). A recently published study of young adults with physical disabilities showed that the participants experienced self-efficacy to be a facilitator in the job search and for maintaining employment (128). This suggests that self-efficacy should be screened for in this population to detect individuals with low self-efficacy, and to offer interventions to increase their self-efficacy in relation to transition to work or studies. Furthermore, Helgesson et al. (2012) showed that unemployment at young age increases the risk of future sick leave, unemployment and DB, and is associated with an elevated risk for death (except for native Swedish women) (57).

No association was shown between self-efficacy and transition to studies. As far as we know, no previous studies have investigated the association between self-efficacy and transition to work or studies in the target group.

Discussion concerning the sources of self-efficacy

Bandura describes four different sources of information from which individuals assesses their self-efficacy. In the following section suggestions for application of the sources on some of the findings of the thesis will be presented; see Figure 8.

Enactive mastery

According to Bandura, enactive mastery is the most effective source to use for building strong self-efficacy (70). Efforts to increase self-efficacy should therefore especially focus on this source in the area of vocational rehabilitation. The assessment of self-efficacy by enactive mastery can be based on e.g. the individual’s earlier success and failures but also by evaluating the help that can be received. In the present studies, support for the source enactive mastery was found especially in Studies II and III. The participants in the ACT and TEAM were provided opportunities for job training during the intervention (Study II). Their earlier work experiences and successes may have helped them to overcome obstacles related to the challenges of the job training (Study II). All participants in the TEAM group also had assistance by an occupational therapist, which may have increased their possibilities of success in the job training and thereby strengthened their self-efficacy. The mapping, especially of the individual’s earlier successes or failures, was reported to strengthen self-efficacy in the participants in Study III, as did the
Figure 8. Suggestions for application of sources of self-efficacy on some of the results.
assessment of available support and help during job training (Studies II and III).

Vicarious experiences
The assessment of self-efficacy through vicarious experiences is based on observations of others. The valuation of own ability is made in relation to others, by evaluating their competence and achievements regarding a given task (70). Information related to this source was not found in our studies. However, vicarious experiences cannot be excluded as a possible source for the assessment and eventual re-evaluation of self-efficacy among participants in our studies through their contact with other project participants (Study III).

Physiological and affective states
According to Bandura (70), individuals judge their self-efficacy according to their physiological and mental state. We found that a larger proportion of participants with low self-efficacy reported worse self-rated health compared with participants with higher self-efficacy (Study I and Study IV). This seems reasonable in relation to Banduras’ theory and according to our results that self-rated health was a predictor for self-efficacy (Study I).

We found anxiety and depression to be the principal predictive factors of low self-efficacy in women on long-term sick leave (Study I). An improvement in anxiety and depressive symptoms among the participants in Study II could have led to an increase in self-efficacy within both intervention groups. Psychological interventions in terms of ACT or CBT could therefore have had positive effects on self-efficacy. However, it is unlikely that this is the explanation for the increase in self-efficacy among the women in the TEAM intervention, since no effects were seen on self-efficacy among the women in the ACT intervention. This result indicates that psychological interventions need to be combined with further rehabilitation efforts, at least in this target group (Study II).

The participants described a decline in worry due to the sense of receiving support and help from the professionals (Study III). This kind of support during vocational rehabilitation may have a positive impact on participants’ health, as has been found in previous studies (129). Since stress has a negative effect on health according to Bandura (70), this kind of support and help from professionals may have an indirect positive impact on participants’ self-efficacy (Study III).

Verbal persuasion
The fourth source for self-efficacy beliefs is verbal persuasion (70). This means that self-efficacy can be strengthened through social verbal persuasion in contact with important persons. The source of verbal persuasion in the present studies could be related to the participant’s designated contact,
contact with team members or the psychologist for participants in the ACT group (Study II). The participants could have developed their self-efficacy to reach their goals through the persuasion received by these contacts, which helped them see their own strengths and abilities. Similarly, the participants in Study III received persuasion from the project professionals who used MI as a tool for meetings and communication. One part of MI is to increase self-efficacy (124) and previous research has shown an association between MI and self-efficacy (130-132). By using MI, the professionals confirmed the participants’ strengths, and the participants who were considered to be able to work were convinced by the professionals that they had the required abilities (Study III). As it is uncertain to what extent MI was applied in the TEAM intervention, it is not possible to know if MI had any influence in the increase of self-efficacy found for the women in the TEAM group (Study II).

Methodological considerations

The overall strength of this thesis is that both quantitative and qualitative approaches were combined in order to describe the relationship between self-efficacy, vocational rehabilitation and transition to work or studies.

Quantitative studies

Strengths

One strength in Studies I, II and IV is the use of the validated GSE-scale for the assessments of self-efficacy (75). In these three studies, questionnaire data were also combined with official registry data. Two of the strengths in Study II were the randomised controlled design, and the fact that no differences were seen between the study groups, i.e. TEAM, ACT and control, before the intervention. This implies that the randomisation was successful, with comparable groups, and that the risk for selection bias was reduced (133). This increases the likelihood that the results can be explained by the intervention. In all studies, inclusion- and exclusions criteria were applied to further reduce the risk for selection bias and reduce the risk of threats to internal validity. In Study II, time series of data was used, which gave the possibility to study longitudinal associations with a 12-month follow-up. Another strength was to handle the attrition that occurred in the repeated measure in self-reported data in the outcome question by using multiple imputations. Other strengths of Study IV are that the questionnaire was developed in collaboration with researchers in the area of Disability and Habilitation to adapt this to the target group, and that the questionnaire was tested in the target population before it was used.

To assure the quality and procedure for assessment, work procedures and practice, the TEAM developed a protocol. The psychologists in the ACT
group and the TEAM group received tutorials in ACT together continuously during the project from a supervisor specialised in ACT. None of the psychologists in the ACT group were working with participants in the TEAM group and vice versa.

**Limitations**

There are also some limitations worth noting. The results of Studies I and II cannot be generalised to others on sick leave due to pain, mental illness or a combination of these because the studies only include women who had been on sick leave for an extremely long period of time. Since Study I was a cross-sectional study, only associations between the measured factors and self-efficacy were detected and not causal inferences. Furthermore, in Study II, self-efficacy (pre-treatment) and anxiety and depression were measured after randomisation. This may have influenced the participants’ estimations due to their knowledge of intervention group affiliation. As mentioned earlier, it was not feasible to investigate which of the components lead to an increase in self-efficacy in the TEAM group in Study II. Further, the number of participants in the ACT group was low, which entails the risk of Type II error, i.e. the risk of accepting the null hypothesis.

The use of the GSE-scale in Studies I, II and IV can be seen as a weakness since this scale measures general beliefs in one’s own ability to cope with a variation of demands in daily life, and not specifically to transition to work or studies. Higher points in the GSE-scale have shown to be associated with higher points in the return-to-work self-efficacy scale (RTW-SE) a specific measure developed for individuals with mental illness (134). For workers with mental- or musculoskeletal injuries Black et al. (2017) found that the association between RTW and self-efficacy was weakest for the GSE scale, compared to other domain specific self-efficacy measures, such as RTW self-efficacy and Job self-efficacy (67). However, these scales are not relevant for the study populations in this thesis as they assume that the responders are employed. For the majority of the participants in Studies I and II, who were still employed, it was not suitable to return to their employment. Regarding the use of the GSE-scale in Studies I and II, comparisons were made with other studies measuring self-efficacy with different scales in other contexts (107, 108, 110-113, 126), with other diagnoses (110, 111) or for shorter periods of sick leave (110-113), which could been seen as a weakness.

There are also some limitations in Study IV. Information was missing about the participants’ duration in unemployment and compensation from the welfare systems. Further, we only knew the disabilities (such as mood, neurotic, developmental, and hyperactivity disorders) for the participants who received DB from the SSIA and only on a group level. It was thus not possible to investigate whether self-efficacy differed between different diagnoses or according to their duration of unemployment and compensation.
from the welfare systems and if these factors had any impact on the participants’ possibilities for transition to work or studies. Information is also missing regarding the individuals who chose not to participate in Studies I, II and IV, and it is likely that individuals with poorer health declined to participate.

Qualitative study

In Study III qualitative method was used since the aim was to capture participants’ experiences. Content analysis has been used in qualitative studies for a long time and was chosen for its ability to analyse verbal and written communication (99). The inclusion of participants and interviews (data collection) continued until saturation in data was considered to be reached. To focus on the study-specific questions, an interview guide was used (135). Trustworthiness is the extent of confidence a researcher has in the qualitative data based on credibility, dependability, confirmability and transferability (135). These can be described as the corresponding concepts to validity, reliability, objectivity and generalisability within quantitative research. The first steps of the analysis were performed independently by the three researchers. Thereafter, discussions followed in the research group until the codes and categories were consistent in order to obtain credibility. To strengthen credibility further, the analysis process was illustrated through examples in the text. To ensure dependability, the steps of the research process were transparently described so it will be possible to replicate the study. To achieve confirmability, authentic citations reflecting the participants’ voices were used in the text as illustrations of the data from which the categories were formulated (135).

The limitations of Study III are that we did not succeed in getting a variation in the sample. To reach a purposeful sampling, the professionals were asked to include participants who were willing to talk about their experiences of the project, both women and men and of various ages. The sample in Study III was older and included fewer women than the Dirigo project. The recruitment of participants to the interviews was performed by the professionals, with whom the participants already had a relationship and were performed at the project site, which may have influenced their answers. Further, the information the participants gave was quite homogenous. Unfortunately, it is unclear how many individuals declined to participate in the study and if they had different experiences of the project and encounters with the professionals. This must be taking into account when interpreting the results and the possibility of transferring these results to other groups.
Conclusions and clinical implications

The overall aim of this thesis was to investigate the relationship between self-efficacy, individually tailored vocational rehabilitation and transition to work or studies. These are the major conclusions:

- The study population in Studies I and II was unique due to their long length of sick leave.

- Levels of anxiety and depression are strongly associated with self-efficacy. This indicates that mental health needs to be addressed in vocational rehabilitation.

- Vocational rehabilitation, based on an assessment by a multidisciplinary team with a multimodal intervention, based on the needs of the individual, and taking into account medical, social and psychological aspects, seems to have a positive effect on self-efficacy.

- Professionals from different agencies working in cooperation with good treatment and a supportive approach seems to be beneficial for persons on sick leave.

- The interaction between professionals working in vocational rehabilitation and the participants may affect the participants’ self-efficacy through a supporting and respectful approach based on motivational interviewing.

- Mapping of the individual’s resources, earlier work successes and verbal persuasion by a professional involved in the vocational rehabilitation, as well as the possibility of support and assistance during job training, seems to improve self-efficacy.

- Higher level of self-efficacy increases the possibility for transition to work in young adults with disabilities, indicating the importance of addressing self-efficacy in the target group to increase their opportunities for employment.
- More focus should be placed on involving employers in the vocational rehabilitation; without their engagement, there are reduced opportunities for a successful rehabilitation.

- Available research showing which efforts and methods are successful in the area of vocational rehabilitation needs to be applied, including those methods focusing on self-efficacy explicit.

Future research

- Future research should investigate the possibility of strengthening self-efficacy in men on long-term sick leave with a multidisciplinary team intervention. Further, both the components in the multidisciplinary intervention that mediate the effects on self-efficacy and the association between self-efficacy and transition to work should be investigated.

- There is a need to develop new self-efficacy scales, one designed for transition to a new employment or to studies, and one adapted to young adults with disabilities.

- Research should investigate the effects of individually tailored vocational rehabilitation based on cooperation and MI on self-efficacy, health and transition to work/studies.

- Studies need to investigate which types of rehabilitation efforts can increase self-efficacy and transition to work/studies in young adults with disabilities.
Sammanfattning (Summary in Swedish)

Bakgrund

Under perioden 2010 till 2016 ökade antalet sjukskrivningar i Sverige med 80%, vilket innebär en ökning i antalet individer som erhåller sjukpenning från Försäkringskassan till följd av nedsatt arbetsförmåga. I slutet av 2016 utgjorde psykisk- och muskuloskeletal ohälsa de vanligaste orsakerna till sjukskrivning. Psykisk ohälsa låg till grund för 53% av sjukskrivningarna för kvinnor och 40% för män. Motsvarande siffror för muskuloskeletal ohälsa var 19% för kvinnor och 24% för män. Förutom att orsaken till kvinnor och mäns sjukskrivning skiljer sig åt är kvinnor i genomsnitt sjukskrivna oftare och under längre perioder i jämförelse med män.


Sjukskrivning kan vara nödvändigt för läkande processer och utifrån de krav arbetet ställer. Forskning visar dock att längre perioder av sjukskrivning är associerat med negativa effekter som bland annat försämrat hälsotillstånd, vilket ytterligare försvårar möjligheten att komma tillbaka i arbete. Dessutom är arbetslöshet i unga år associerat med negativ hälsoutveckling och lägre välbefinnande, samt med ökad risk för framtida sjukskrivning, sjukpension och förtida död.
Arbetslivsinriktad rehabilitering är rehabiliteringsinsatser som syftar till att underlätta återgång i arbete. Det innebär att en individ som drabbats av ohälsa ska återvinna sin arbetsförmåga och därmed få förutsättningar till egen försörjning genom arbete. Rehabiliteringen bör anpassas utifrån individens behov och kan innefatta medicinska, sociala och arbetsinriktade insatser.

Hög self-efficacy hjälper individer att övervinna svårigheter och utmaningar medan låg self-efficacy begränsar en individs förmåga. Medelvärdet för generell self-efficacy har visat sig vara omkring 2.9 (1=lägsta möjliga värde, 4=högsta möjliga värde) i en allmän befolkning.


**Syfte**

Det övergripande syftet med denna avhandling var att studera relationen mellan self-efficacy, individuellt utformad arbetslivsinriktad rehabilitering och påbörjan av arbete/studier. Avhandlingen innefattar fyra delarbete.

Syftet med delarbete II var att undersöka vilken effekt två arbetslivsinriktade rehabiliteringsinterventioner hade på self-efficacy hos kvinnor som varit sjukskrivna lika med eller längre än 1 år till följd av psykisk ohälsa och/eller smärta. Urvalet bestod av 401 kvinnor och var delvis samma som i Studie I. Deltagare randomiserades till en av följande tre grupper:

1) TEAM, vilket innefattade en bedömning av ett multidisciplinärt team (bestående av läkare, psykolog, arbetsterapeut/sjukgymnast och socionom) och därefter en multimodal intervention, utifrån en gemeinsam diskussion om adekvata rehabiliteringsinsatser och i samråd med deltagaren. TEAM medlemmarna arbetade utifrån ett acceptance and commitment (ACT) perspektiv och hade utbildning i motiverande samtal (MI).

2) ACT, som är en psykologisk behandling som går ut på att förändra individen förhållningssätt till sina problem utifrån tre huvudprinciper; medveten närvaro (mindfulness), acceptans samt grundläggande värderingar. Både TEAM och ACT innefattade samverkan med Försäkringskassan och Arbetsförmedlingen.

3) Kontrollgrupp som fick sedanvänt handläggning vid Försäkringskassan.

Data samlades in via enkäter som besvarades av deltagarna vid tre tillfällen (före behandlingens påbörjan samt efter 6 och 12 månader). Data erhölls även via Försäkringskassans register. Resultatet visade att endast TEAM gruppen hade en signifikant ökning i self-efficacy över tid (medelvärde 2.29 – 2.74) jämfört med kontrollgruppen (2.24 – 2.51) (F=16.43, p=0.001). En högre nivå av self-efficacy innan interventionen var associerat med högre nivå av self-efficacy vid 12 månader. I analysen kontrollerades för grupptillhörighet, ålder, anställningsstatus, sjukskrivningslängd, self-efficacy före behandlingens påbörjan samt ångest och depression (HADS).

Delarbete III hade som syfte att undersöka långtidssjukskrivna upplevelser av en individanpassad arbetslivsinriktad rehabilitering och mötet med de handläggare som arbetade i denna. Projektet var riktat till individer med psykisk ohälsa och/eller smärta som var långtidssjukskrivna. Projektet baserades på samverkan, individuellt utformade insatser samt motiverande samtal (MI). Fjorton strategiskt utvalda individer intervjuades individuellt. Data analyserades med kvalitativ innehållsanalys. Analyserna visade att deltagarnas erfarenheter av interventionen var övervägande positiva. De positiva erfarenheterna baserades på fyra nyckelfaktorer, vilka utgjorde följande kategorier: 1) Möjlighet att erhålla olika former av stöd, 2) Gott bemötande av handläggarna, 3) Tillfredsställelse med interventionens arbetsmetoder och 4) Möjlighet till personlig utveckling. Stödet uttrycktes genom känslan av att ha någon vid sin sida, få hjälp att sätta upp mål, erhålla coachning och guid-

Delarbete IV syftade till att undersöka self-efficacy hos unga arbetslösa med funktionsnedsättning samt eventuella samband mellan self-efficacy och senare påbörjan av arbete/studier. Studien använde enkäter och registerdata från 249 unga med funktionsnedsättning i åldern 19-29 år som deltog i en arbetslivsinriktad intervention inom samverkan mellan Försäkringskassan, Arbetsförmedlingen och kommunen. Resultatet visade att målgruppen hade låg generell self-efficacy (medelvärde = 2.5) och att unga som hade låg self-efficacy (under eller lika med 2.5) rapporterade sämre självskattad hälsa jämfört med de som hade hög self-efficacy (över 2.5). Hög self-efficacy hade ett positivt samband med att påbörja arbete men inte för påbörjan av studier. De som hade hög self-efficacy hade 17% högre sannolikhet att påbörja arbete.

Konklusion

Denna avhandling visar att ångest och depression är associerad med self-efficacy samt att multidisciplinär bedömning med följande multimodal rehabilitering, som utgår från individens behov och baseras på medicinska, sociala och psykologiska aspekter hade positiv effekt på self-efficacy. Detta indikerar att den psykiska hälsan behöver uppmärksammas och bemötas inom arbetslivsinriktad rehabilitering samt att hänsyn bör tas till individens hela livssituation.

Individuell anpassning, samverkan mellan professioner från olika organisationer och MI tycks vara stödjande faktorer i den arbetslivsinriktade rehabiliteringen för långtidssjukskrivna.

Interaktionen mellan professioner som arbetar inom arbetslivsinriktad rehabilitering och de individer som deltar i denna, kan påverka individers self-efficacy genom ett stödjande och respektfullt förhållningssätt baserat på MI. Kartläggning av individernas resurser och tidigare framgångar i arbetslivet, stöd av professioner som är involverade i den arbetslivsinriktade rehabilite-
ringen samt hjälp och uppföljning under arbetsträning är insatser som kan bidra till att öka self-efficacy.

Högre nivå av self-efficacy hade positivt samband med påbörjan av arbete hos unga vuxna med funktionsnedsättning. Dessa resultat visar på betydelsen av att uppmärksamma self-efficacy inom den aktuella målgruppen samt utveckla arbetsmetoder för att mäta och stärka self-efficacy hos dessa unga.

I förlängningen kan mer kunskaper och beaktande av self-efficacy bidra till utformandet av effektivare rehabiliteringsinsatser som ökar individers förutsättningar till deltagande i arbete. Framtida utmaningar ligger därför i att öka kunskapen om self-efficacy ytterligare och i att involvera arbetsgivarna i den arbetslivsinriktade rehabiliteringen.
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References


34. Swedish National Board of Health and Welfare. Individanpassat stöd till arbete enligt IPS-modellen – vägledning för arbetscoacher [Individual support for work according to the IPS-model - guidance for job coaches] [Internet]. Socialstyrelsen; 2012 [cited 2017 Jun 13]. Available from: https://www.socialstyrelsen.se/Lists/Artikelkatalog/Attachments/18796/2012-8-5.pdf


82. Schwarzer R. Everything you wanted to know about the General Self-Efficacy Scale but were afraid to ask [Internet]. [Cited 2017 Jul 7]. Available from: http://userpage.fu-berlin.de/~health/faq_gse.pdf.
84. Life and Health. Liv och hälsa 2008 - en undersökning om hälsa, levnadsvanor och livsvillkor [Life and health 2008 - a survey on health, lifestyles and living conditions] [Internet]. [Cited 2015 July 17.] Available from: http://www.lul.se/Global/V%e3%a5rd_h%e3%a4lsa/Liv%20och%20h%c3%a4ls%e2%80%a4n%e2%80%9aung%202011/Liv%20och%20h%c3%a4lsa%20ung%20ff%e2%80%a4gor% 20amlade.pdf.


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