Supported Employment and preventing Early Disability (SEED)

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Thesis for the degree of Philosophiae Doctor (PhD)
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Scientific environment

The work presented in this thesis was conducted in the research group Stress, Health, and Rehabilitation at NORCE Norwegian Research Centre (formerly Uni Research), in Bergen, Norway, and included a three-month research stay at the Dartmouth Psychiatric Research Centre, Geisel School of Medicine, Dartmouth College, in NH, US.

The thesis was carried out within the institutional framework of the doctorate program of the Graduate School of Human Interaction and Growth (GHIG) at the Faculty of Psychology, University of Bergen, where the PhD candidate was associated with the Department of Psychosocial Science.

The project, including the overseas research stay, was funded by a grant from the Research Council of Norway (RCN), program for Sickness Absence, Work and Health. The RCN is a government agency awarding grants for research based on review by an external international expert referee panel. The funding source did not have any role in the design, data collection, analysis, nor interpretation of data or publication of results.

Supervisors were Silje E. Reme, PhD (main supervisor), Jørn Hetland, PhD (internal supervisor), Hege R. Eriksen, PhD, and Gary R. Bond, PhD (external supervisors).

Acknowledgements

These PhD years have been quite the journey.

My time at Uni Research started with my master's thesis, guided by Anette Harris and Holger Ursin, who couldn't get rid of me after I had finished. The two of them were my entry into the scientific world, for which I will always be grateful. Anette is an amazing teacher and advisor, who taught me the CATS-theory and guided me through the areas over and under cortisol curves which resulted in a published paper. Holger Ursin became my senior mentor and a good friend whom I miss dearly—Holger, many a time do I think of you and I wish you were here still and could celebrate the completion of the SEED-trial with me.

Through a student research stipend during my master's program, I started working as an assistant in the research group of Stress, health and rehabilitation led by Hege Eriksen. Hege has been an important resource person throughout my years as a PhD student, and I foresee that she will continue to be so in the years to come. Thank you so much Hege, for all the time and hard work you have spent as a co-supervisor for my thesis.

In 2012, a blonde bombshell came walking back into Uni Research, and she was wearing heels. She had been in the US and had brought a fantastic research idea home with her: Individual Placement and Support, or IPS. This person was Silje Reme, my main supervisor and my inspiration, and we spent months writing applications for IPS projects in Norway. *Thank you so much Silje, for all the backing, patience, and support you have given me.* When the news came that we had received funding for a large RCT on the subject, little did we know that the funding for a second RCT would be granted later that same week. Should we feel happy or nauseous? I think we were a little bit of both. That was the start of my life as an IPS researcher. I feel privileged to work with such a truly interesting topic, and an approach that holds much promise for marginalized and often socially excluded and stigmatized groups. Everyone should be so lucky. IPS is a methodology, but also a philosophy and ideological approach, developed by a group of dedicated researchers at Dartmouth, NH.

During my stay abroad at the Dartmouth Psychiatric Research Center, I lived in Oak Ridge Road, alongside neighbors Gary Bond, Deborah Becker, and Robert Drake. I thought they were a bit intimidating at first, but that was only before we talked. Gary, Bob, and Debbie: I am thankful for your hospitality and for everything you have taught me. Thanks to Gary for being a co-supervisor on my thesis, and for being the quickest and most efficient responder to e-mails and drafts that I have ever met, your advice throughout the process have been invaluable. Thank you also for our daily drives to work and exchanges of Norwegian and American "sayings of the day", and to your wife, Karli, for her wonderful cooking. Thanks to my "swimming-partner" Bob and my "mother away from home" Debbie, for our trips to the theater, our stimulating talks and discussions, and for inviting me to your Thanksgiving dinner.

My research group Stress, Health and Rehabilitation at Uni Research (now a part of NORCE) has been a compilation of talented researchers throughout the years, who each in their own ways have made everyday PhD-life day easier to cope with: Silje Mæland and Camilla Løvvik (both strong and inspiring women, and clever public speakers), Stein Atle Lie (statistics wiz and cheerful humorist), Jon Opsahl (the clever multi-talent, always helpful and kind), Magnus Odéen (the magnificent joy-spreader), Tonje Fyhn (such a generous and including person, and my fellow IPS-buddy), Elisabeth Husabø (who brightens up the office with her presence), Irene Øyeflaten (the talented hard worker, who always wears a smile), Line Remme (my always helpful companion), Valborg Baste (who masters the art of explaining statistics without making you feel helpless), Torill Tveito (our wise group leader, wearer of cute shoes, and also a former dentist who will let you lean back under her desk-light to take a look at an aching wisdom tooth), and my other colleagues who are always helpful in their work, including Mariann Apelseth (economy and budgeting), Bente Groth (HR), Hanne Fosheim and Rune Rolvsjord (communication), Nina Konglevoll (research technician), Mette Norvalls (all-knowing senior secretary), and many others. Thank you all for your social support.

There is need for a separate paragraph for Eline Ree and Tone Langjordet Johnsen, who have been my closest partners in the life as a PhD-student. We have all been in the same boat, and you have shown me that it is possible to write a thesis on a randomized controlled trial and live to tell the tale! Thank you for our friendship, all of our talks, sleepovers, and travels throughout these years. You are both so wonderful and I can't imagine what I would have done without you.

I also wish to thank the broader academic environment in NORCE and the University of Bergen throughout these years, including Mari Hysing who helped me develop the questions for insomnia, and Dan Olweus who suggested that I include questions about bullying in the SEED-trial and helped me form the questionnaire together with Jørn Hetland. Jørn, thank you for being a co-supervisor on my PhD-thesis (as well as on my bachelor's thesis in the past), and for offering your competence in the bullying-field. I am sure we will keep collaborating on papers on this topic in the future.

Thanks to the Research Council of Norway for agreeing to fund the SEED-trial and my doctoral research fellowship, including the research stay abroad. Thanks to the Norwegian Labor and Welfare Administration for allowing us to intrude on their daily routines with a randomized controlled trial, and for being interested in evidence-based knowledge in your practices. Special thanks to Egil Arne Aas, Marianne Bjørkly, and Tommy Johansen. Thanks to Fretex, including the team-leaders and employment-specialists who carried out the IPS-intervention in the SEED-trial, and Thomas Knutzen who advised the IPS-team and carried out fidelity reviews. And importantly, thank you to all the participants in the SEED-trial, who made the project possible and contributed to create awareness and knowledge that may help others in their situation.

A PhD-thesis is not only a result of an academic environment, but is formed by one's life outside the office. My deepest and heartfelt thanks to my parents Ingibjörg and Svein, for being my rock and giving me all the opportunities that I've had in life. To my mother, for being the protective, strong, and kindhearted person you are, for taking care and always being there for me. To my father, for being an amazing dad and an inspiration both academically as well as in terms of showing how great barriers in life can be overcome if you never give up. Thanks to my sister Hildur and brother Steinar, for your loving presence and support, I am grateful beyond words to have you in my life. Thanks to my family and friends in Iceland, for welcoming me and providing a much appreciated and refreshing retreat to my second home every summer. The same goes to my friends in the historical reenactment community, few things are as relaxing for a stressed-out student as living and sleeping outside in the summertime, and spending nights around the fire with fellow history-geeks. A special thanks to my dear friend Therese, who has had my back through all these years, we have so much fun together and you are such an important resource in my life.

And last but not least, to Christian! Thank you for filling my days with smiles and hugs, for making home such a good place to come to, and for reminding me that what is truly important in life is not a PhD.

Abstract

Young adults who are not in education, training or employment (NEET) represent an international challenge that causes worry due to the potentially harmful health-effects of unemployment, and the economic costs for society. The NEET population includes those who are temporarily unemployed or inactive, as well as more marginalized groups at high risk of prolonged or lifelong disengagement. Being excluded from the labor market in early adulthood can have severe consequences for later work participation, and the diversity of the NEET population implies a need to focus on specific subgroups. In Norway, the share of young adults receiving permanent disability benefits has increased considerably during the last years. The main reason for early disability benefits in Norway are mental and behavioral disorders, and risk factors include socioeconomic factors such as low educational attainment. There is however little knowledge about the individuals who are at high risk, but have not yet reached the point of more permanent exclusion from the labor market. This thesis focuses on young adults with impaired work capability who are *at risk of early work disability due to various social and health-related challenges*.

Studies of vocational rehabilitation of NEETs are scarce, and existing knowledge is insufficient to guide policy-makers and other stakeholders in efforts for this group. Furthermore, policies aimed at NEETs in general may be more appropriate for those who are ready to work, while failing to reach the most vulnerable groups. Individual Placement and Support (IPS) is a high-contact approach that is effective for patients with severe mental illness. It is based on clearly defined principles with a main focus on ordinary paid employment in the competitive labor market. IPS is effective across a range of demographic and clinical subgroups with severe mental illness, but there is limited evidence about the effectiveness of IPS in non-psychiatric populations.

The aim of the thesis was to generate knowledge about young adults at risk of early work disability in Norway, and to investigate whether the Individual Placement and Support (IPS) model of supported employment may help this group enter the labor market.

The aim of paper I was to plan and design a randomized controlled trial to evaluate the effectiveness of repurposing IPS to young adults at risk of early work disability due to various social or health-related problems. The trial was named Supported Employment and preventing Early Disability (the SEED-trial), and compared IPS to a control group that received traditional vocational rehabilitation using traineeships in sheltered businesses. Participants were NEETs, aged 18-29 years old, receiving temporary benefits, and had been considered eligible for traineeships in sheltered businesses. The primary outcome was competitive employment, defined as any paid employment in the competitive labor market during the first year after enrollment. Secondary outcomes included physical and mental health, health behaviors, and well-being. Survey data were collected at baseline, 6, and 12 months. The trial design also included long-term follow-up using register data for benefit recipiency, income, and education for five years after inclusion in the study, and a cost-benefit analysis.

The aim of paper II was to investigate social and health-related characteristics in young adults at risk of early work disability in Norway, and what they believe may have caused their illness. The paper used baseline data from the 96 participants who were included in the SEED-trial. The majority were male, single, childless, and nearly half were living with their parent(s). Participants had relatively low educational attainment, and more than half reported hazardous drinking or active alcohol use disorders. The prevalence of psychological distress was high, which coincides with previous knowledge about the major reasons for early work disability in Norway. The most noteworthy findings with important implications for efforts targeting this group were however related to psychosocial stressors, including a high prevalence of bullying and exposure to violence. When participants who considered themselves to have an illness were asked about the reasons for their illness, the most common responses were also related to non-medical causes, especially relational problems such as loneliness and isolation.

The aim of paper III was to evaluate the effectiveness of IPS versus traditional vocational rehabilitation for young adults at risk of early work disability, on outcomes of competitive employment, and physical and mental health and well-being. Findings showed that significantly more participants in the IPS group (48%) obtained competitive employment compared to participants in the control group (8%) during 12-month follow-up. The groups did generally not differ on health-related outcomes in unadjusted analyses, with a few exceptions. However, when adjusted for baseline and missing observations in post hoc analyses, the IPS group reported significantly better outcomes in anxiety, subjective health complaints, pseudoneurology, helplessness, hopelessness, and drug use at 6-month follow-up, and in level of disability, subjective health complaints, optimism about future well-being, helplessness, hopelessness, and drug use at 12-month follow-up.

The findings of this thesis have several implications. In addition to underlining the importance of preventive measures to reduce social exclusion by bullying and early dropout, the findings suggest that there is need for a broader focus on psychosocial aspects in vocational rehabilitation of young adults at risk of early work disability. The findings that IPS was superior to the control condition in increasing competitive employment among this group of NEETs, and that IPS may also have beneficial effect on health, furthermore indicate that vocational rehabilitation for this group should be redirected from traditional sheltered approaches to individualized support in competitive work settings. The SEED-trial is also the first to show that IPS can be successfully repurposed to this new and vulnerable target group at risk of being excluded from working life before having established themselves on the labor market.

List of publications

Sveinsdottir V, Tveito TH, Bond GR, Grasdal AL, Lie SA, Reme SE. Protocol for the SEED-trial: Supported Employment and preventing Early Disability. BMC Public Health. 2016;16:579.

Sveinsdottir V, Eriksen HR, Baste V, Hetland J, Reme SE. Young Adults at Risk of Early Work Disability: Who are they? BMC Public Health. 2018;18:1176.

Sveinsdottir V, Lie SA, Grasdal A, Bond GR, Reme SE. Individual Placement and Support for Young Adults at Risk of Early Work Disability (the SEED trial). A Randomized Controlled Trial. Scand J Work Environ Health. 2019; Advance online publication: http://doi.org/10.5271/sjweh.3837.

Central abbreviations

CATS – Cognitive Activation Theory of Stress

IPS – Individual Placement and Support

MLE – Maximum Likelihood Estimation

NEET – Not in Employment, Education, or Training

OECD – Organization for Economic Cooperation and Development

RCT – Randomized Controlled Trial

SE – Supported Employment

SEED – Supported Employment and preventing Early Disability (the SEED-trial)

SMI – Severe Mental Illness

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PAPERS

APPENDICES

1. INTRODUCTION AND THEORETICAL FRAMEWORK

1.1. Introduction

1.1.1. Overview of the thesis (mind-map)

This thesis concerns a randomized controlled trial of vocational rehabilitation interventions, evaluating the effect of the Individual Placement and Support (IPS) model of supported employment in a Norwegian context and for a new group of participants, namely young adults at risk of early work disability due to various social and health-related problems. The three papers included in the thesis concern the planning and design of the trial (paper I), social and health-related characteristics of the important yet relatively unknown target group (paper II), and the effect of IPS on competitive employment and health-related outcomes (paper III).

Vocational rehabilitation touches upon a range of large societal topics, including individual and public health and well-being, economy, policy, and culture. In the following pages, I will go into depth to provide a summary of the literature and theoretical framework forming the backdrop for the research, and discuss the methodology, results and implications of the thesis. The mind map in figure 1 provides a visual overview of its context, setting the scene for the upcoming chapters. Although the overview is not exhaustive, these interrelated topics and their branches illustrate the vastness of the field, all surrounding its core subject: Employment.

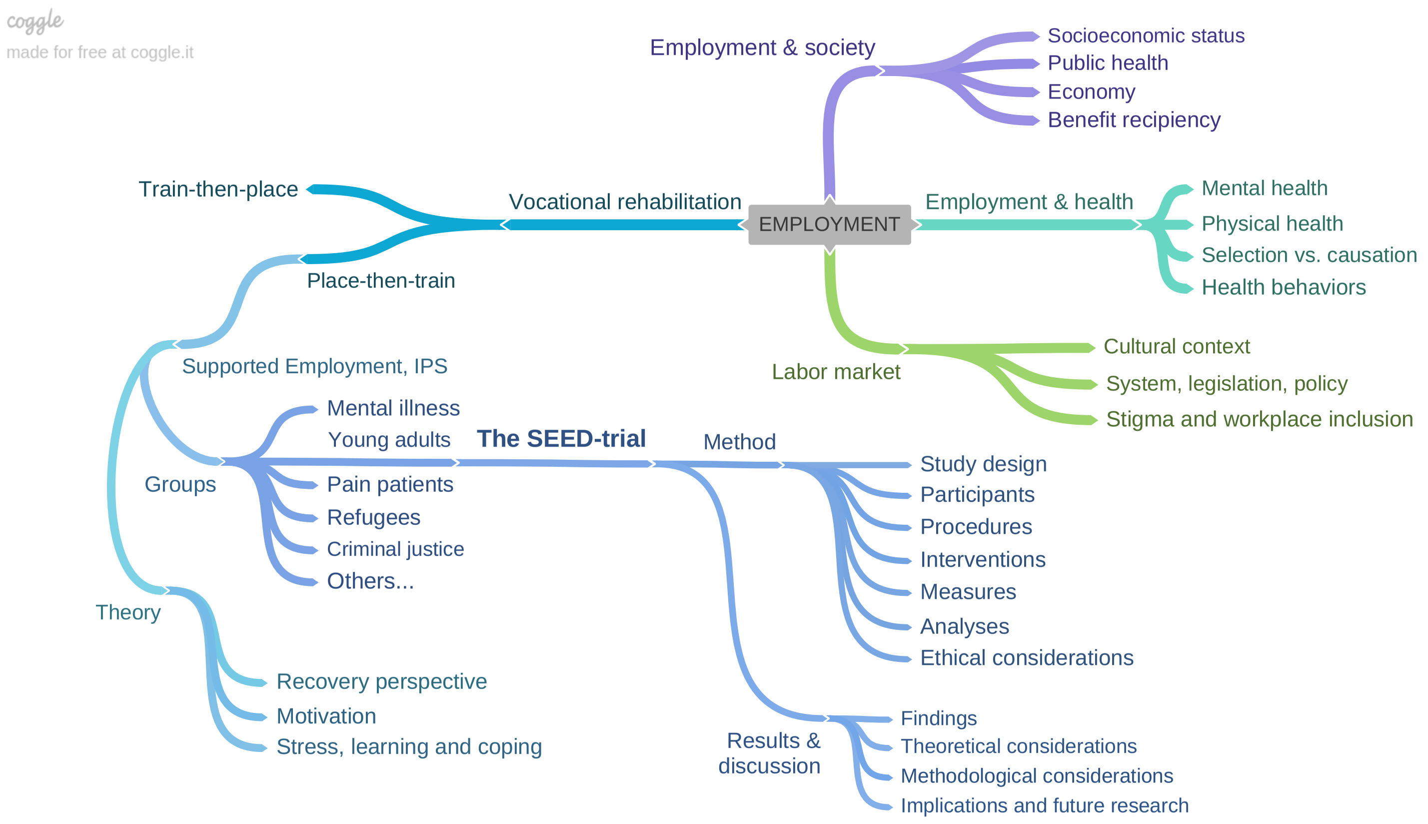

Figure 1: Visual overview of the thesis and its context

1.1.2. Health

The etymology of the Old Norse word *heill* (healthy), from Proto-Germanic *hailitho* and *hailaz* (whole), provides us with some insight into our ancestors' understandings of health as the *intact and unbroken*, but also as the *complete and entire* (1). While some thousand years have passed, these positive and negative approaches to the concept of health are still relevant as a contemporary topic for discussion.

In 1948, the founders of the World Health Organization (WHO) defined health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (2, p. 1). The holistic approach of the WHO definition contrasted sharply with a more traditional and biomedical definition of health as the absence of disease, in which disease is generally perceived as specific and diagnosable (3, 4). While maintaining support among many health researchers and practitioners (e.g. 5, 6), the WHO definition has been the source of controversy, criticized for being utopian and unattainable in the sense that most people might never attain a state of health based on such requirements (7). The Ottawa Charter proposed an adaption focusing on social and personal resources as well as physical capacities, and further defined health promotion as "the process of enabling people to increase control over, and to improve, their health" (8, p. 1). Similarly, international health experts have suggested that definitions lay more emphasis on the individual's ability to cope with social, physical and emotional challenges (9). Focusing on adaption and self-management of symptoms, these perspectives align with contemporary changes in demography and the nature of disease in modern health care systems; where improvements in conditions such as sanitation and nutrition have been followed by a shift toward noncommunicable or chronic illness as the main disease burden (9, 10).

Coping-oriented approaches to health further challenge the dualistic approach to mind and body, and are exemplified in treatments such as cognitive behavioral therapy (CBT) for various chronic symptoms including e.g. musculoskeletal and gastrointestinal illness (11, 12). Separating physical and mental health into two linguistic entities in the literature—including this thesis—may imply that we have failed to recognize the brain as a physical organ connected to the remainder of our bodies. While recognizing that such a division is artificial, it can help to provide structure in lack of more accurate terms. It is however important to emphasize that physical and mental health are viewed as mutually dependent aspects, where borders can be blurred or even nonexistent, and that interventions targeting either may be similarly relevant to the other.

1.1.3. Employment and health

The relationship between employment and health, especially mental health, is well-documented in the international literature (13). Questions about causality and directional issues are however common problems in the interpretation and discussion of this relationship. According to a social selection hypothesis, the association is explained by good health being a necessary condition for employment, causing individuals with poor health to have more difficulties in finding and keeping a job (14). A social causation hypothesis, on the other hand, states that employment leads to health benefits and/or that unemployment is harmful to health (14).

While studies show that selection effects do occur, evidence from systematic reviews and meta-analyses suggest that social causation mechanisms play an equally or perhaps more important role: A meta-analysis of 16 longitudinal studies found that job loss and unemployment were associated with increased mental distress, while re-employment reversed the negative effects of unemployment on mental health (15). The results were supported by a large meta-analysis of 237 cross-sectional and 87 longitudinal studies, suggesting that unemployment is not only caused by mental health problems, but also causes them (16). Moderator analyses revealed that mental distress by unemployment was stronger among men, blue-collar workers, and those who had been unemployed longer, as opposed to women, those with white-collar jobs, and short-term unemployed persons (16). Similarly, a systematic review looking at 18 longitudinal studies investigating transitions between unemployment and employment, found selection effects to unemployment as well as support for a beneficial health effect of returning to work (17). The authors suggest that selection and causation are mutually reinforcing processes, that work together in shaping the individual trajectories over time, while the evidence for causation was somewhat stronger than that for the selection effect (17). The study included both physical and mental health outcomes, but was not able to distinguish between these in the results (17). Another systematic review of 33 longitudinal studies which also looked at both physical and mental health, found strong evidence for a protective effect of employment on depression and general mental health, but results for general health, physical health, and mortality were deemed to be insufficient (18). Correspondingly, a meta-analysis of 104 studies looking at mental and physical well-being during unemployment, showed a negative association between unemployment and mental health, generally supporting a causal relationship (19). The study found that more than three quarters of the studied correlations involved mental health, resulting in insufficient or low sample sizes on non-mental variables. In their review project from 2006, Waddell & Burton found strong associations between unemployment and reductions in both mental and physical health, as well as strong associations between re-employment and improvements in both areas (13). Although they used a systematic search strategy, their review included studies that were excluded from most other reviews and meta-analyses, such as policy-papers and cross-sectional data, which may explain why others have not reproduced their findings on physical health variables (18). Some studies have however found associations between unemployment and mortality, including a large meta-analysis and meta-regression that showed a substantially increased risk of death among unemployed, especially among young individuals, with limited support for a health selection effect (20).

While the literature has established strong relationships between employment and health, and especially mental health, the mechanisms behind the relationships are relatively unknown. In her classic book from 1982, Jahoda discussed several important employment-related functions to well-being from a social psychological stance, arguing how having a job can provide structure of time and organize daily activity, create social identity, provide social contact, and a collective effort or purpose (21). Employment furthermore makes the individual part of the “working society,” receiving paychecks as opposed to benefit checks, and provides answers to otherwise dreaded questions related to occupation that commonly arise in social settings. Studies investigating stigmatization among the unemployed have suggested that anticipated stigma may be a contributor to the relationship between unemployment and increased psychological and somatic symptoms (22).

Mechanisms of health behaviors such as alcohol and substance abuse, diet and physical activity, may further explain part of the relationship between work and health. For instance, unemployment has been found to be a risk factor for unhealthy behaviors such as alcohol misuse (23, 24), and it has been suggested that although some selection of alcohol disorders to unemployment does occur, the high prevalence of harmful drinking among this group is mainly a result of the unemployment rather than vice versa (25). There is however conflicting evidence of the impact of unemployment on health behaviors, and these mechanisms are likely to vary according to socioeconomic status as well as type of exit from work (13, 26). Another possible mechanism includes the link between stress and health. Lack of coping with challenges such as unemployment and reduced income, may lead to prolonged stress and health problems through pathophysiological processes (27). This has been described as an "allostatic load" that can accumulate over time and have adverse effects on e.g. immunological responses and accelerate disease processes (28).

1.1.4. Employment in a societal perspective

The relationship between employment and health as discussed above illustrates the importance of facilitating work participation, not only at the individual level, but in a broader social perspective. Employment and socioeconomic status are the main drivers of social gradients in health and mortality, and there are both economic, social, and moral arguments for promoting employment as means to improve well-being (13). Substantially poorer health among groups of lower socioeconomic status has been found throughout Europe (29), and inequalities in mortality are larger in Norway than in many other European countries (30, 31). Socioeconomic differences explain about three quarters of the regional variance in mortality in Norway (32), amounting to as much as eight years in life expectancy between different districts in the capital Oslo (31). In his book "The Status Syndrome: How Social Standing Affects Our Health and Longevity," Marmot recommends efforts to promote autonomy and social participation to increase overall public health (33), along with policies to improve opportunities for work and reduce the health consequences of unemployment (34). Efforts targeting education and employment among the disadvantaged can be a strategy to reduce social inequalities in health and increase life expectancy (31), and labor market participation may thereby be viewed as a public health concern.

The economic aspect of exclusion from the labor market is another important side of the matter, representing a burden for the society in terms of lost productivity and economic growth, and tax funded social expenditures. Public spending on sickness and disability benefit programs represents a considerable societal cost across OECD countries (35), and the Norwegian Labor and Welfare Administration administers one third of the Norwegian national budget through benefit programs including unemployment, sick leave, disability, and pensions (36).

1.1.5. Work disability in Norway

A Norwegian employee who gets ill will receive 100% financial compensation from the first day and up to one year, of which the first 16 days are covered by the employer. If the worker's earning capacity remains impaired by at least 50% after the one-year period, he or she is eligible for work assessment allowance for up to three years (in some cases with a possible extension of up to two years), providing 66% compensation of income. Compensation is not offered for income that exceeds six times the national insurance basic amount. In 2018, the national insurance basic amount equaled approx. €10´000 per year. Unemployed persons with at least 50% impairment are also eligible for work assessment allowance, in which cases the compensation is calculated based on a minimum rate of two times the national insurance basic amount. While receiving work assessment allowance, the individual's work ability is assessed, and he or she is required to participate in creating and keeping to an activity plan which may involve ongoing treatment or participation in various employment schemes (37). If the time-limit has passed without the earning capacity exceeding 50% (in certain circumstances 60-70%) due to permanent illness or injury, the next step may involve application for partial or full disability benefits. Corresponding to the work assessment allowance, full disability benefits normally cover 66% of the worker's average income, and are calculated based on a minimum rate for individuals with low or no income (38). Those aged younger than 26 at the time of impairment can apply for entitlement as a "young disabled person," to receive a higher rate compensating for lack in previous earnings of supplementary pension (39). The scheme for young disabled persons was introduced in 1981 and has been revised several times, including a revision in 1998 enforcing stricter requirements to severity and documentation of the injury or illness (40).

1.1.5.1. Levels and trends

The percentage of the working population (aged 18–67) receiving disability benefits over the last ten years has been relatively stable at an average of 9.3-10.0%, with women ranging 2.9–3.8 percentage points higher than men (see figure 2). The numbers from 2009-2010 include temporary disability benefits, which were removed when work assessment allowance was introduced in 2010 (41).

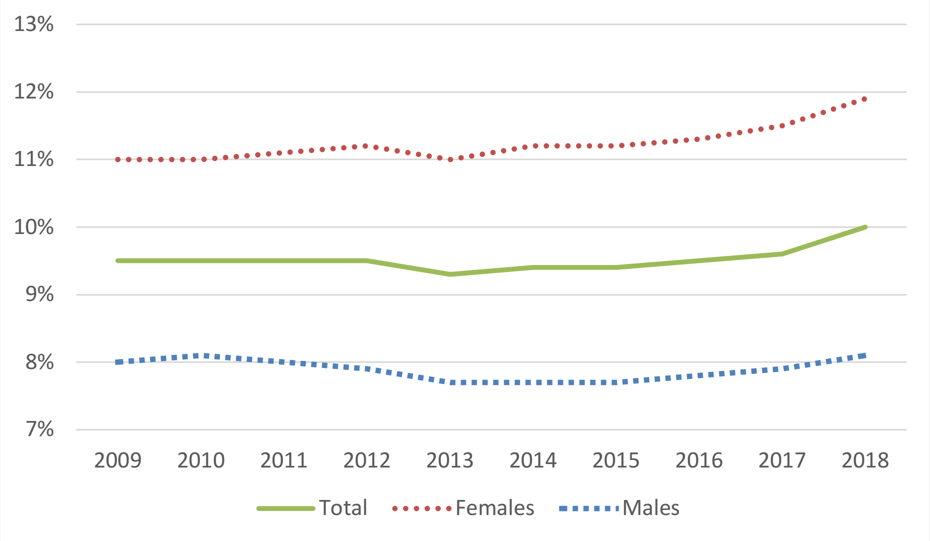

Figure 2: All recipients of disability benefits in Norway, percentage of the population aged 18-67 as per December 31st 2009-2018. Based on data from the Norwegian Labor and Welfare Administration online statistics database (41).

Out of these, 35% receive disability benefits due to mental illness and 28% due to musculoskeletal illness, while the remaining share is scattered across other conditions (42).

1.1.5.2. Young adults and early disability

The term *young adults* as used in this thesis focuses on the age group between 18–29, incorporating the age of majority in Norway and the transition phase into adulthood. This coincides with the life stage described as *emerging adulthood* in developmental psychology (43), and the Norwegian classification of young disability recipients (44). It includes transitions between different levels of education, and from education into the labor market—vulnerable phases that are not always linear and smooth, but may increase the risk of dropping out of school or becoming unemployed (45).

While the overall percentage of disability recipients has remained relatively stable, there is a trend toward decreasing levels of older disability recipients, while the share of young disabled persons (aged 18–29) has increased during the same period (see figure 3) (46). The gender differences are smaller yet reversed as compared to the average levels presented in figure 2, with more young men receiving disability benefits as compared to their female counterparts. Levels have increased for both genders, from 2.6–5.3% of all disability recipients, with men ranging 1.5–2.9 percentage points higher than women.

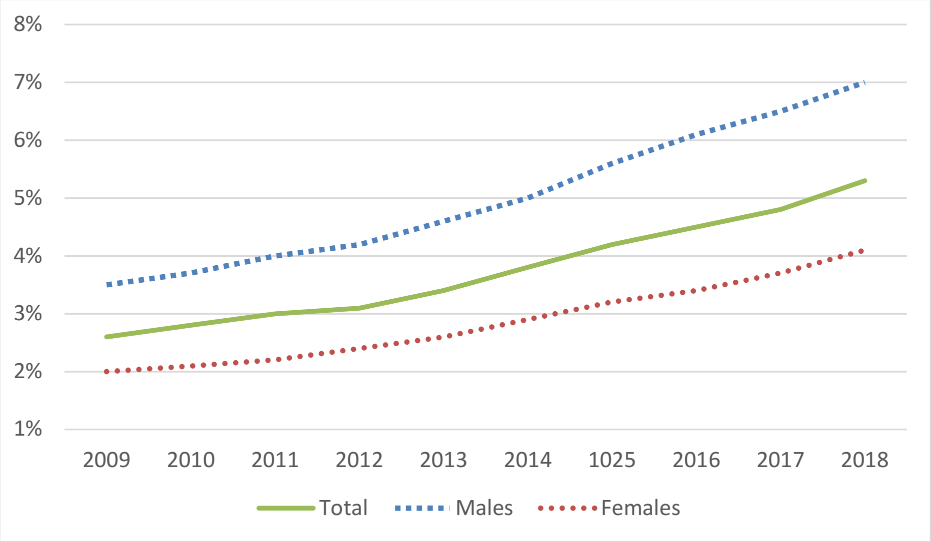

Figure 3: Young recipients of disability benefits in Norway (aged 18-29), percentage of all recipients of disability benefits in Norway as per December 31st 2009-2018. Based on data from the Norwegian Labor and Welfare Administration online statistics database (41).

The distribution of diagnoses also looks different for this age group than for disability recipients in general, with 63% of beneficiaries in the mental illness category alone, with the remaining being related to congenital malformations and chromosomal abnormalities (13%), nervous system disorders (11%), and all other conditions such as e.g. injuries, poisoning and violence (2%), musculoskeletal illness (1%), and tumors (1%) (42).

A registry study of the different age categories within young disabled in Norway showed that the most important medical causes for disability in the youngest group (aged 18-19) were intellectual disabilities, congenital malformations and chromosomal abnormalities, e.g. Downs syndrome (44). The increase for the group aged 20-29 is however mainly due to other mental illness, including schizophrenia, pervasive developmental disorders, behavioral and personality disorders, and affective and anxiety disorders (44). Improved medical treatment of children with chromosomal abnormalities, and decrease in infant mortality among children with congenital disorders is believed to account for some of the increase in the youngest group. The increase in young disabled per se is however not likely to be attributable to these factors alone. A closer look at the dataset in Brage & Thune (44) shows that the proportional increase in young disabled from 1977 to 2012 does not decrease when these patient groups are removed, on the contrary, it increases in all groups (see table 1) (S. Brage, personal communication, March 19th, 2015).

Table 1: Comparison of disability rates (per 100’000) in 1977 vs. 2012, including and excluding congenital disorders (intellectual disability, congenital malformations and chromosomal abnormalities) (S. Brage, personal communication, March 19th, 2015).

	1977	2012	Percentage increase
Including congenital disorders			
16-19 years	72.4	491.5	579%
20-24 years	65.1	141.1	117%
25-29 years	100.3	232.7	132%
Excluding congenital disorders			
16-19 years	25.2	245.8	875%
20-24 years	42.5	105.8	149%
25-29 years	81.3	217.5	168%

Young people with reduced working capacity in Norway are characterized by lower educational attainment and work experience than their peers (47), characteristics which are also among the strongest determinants of work disability for people aged younger than 40, along with difficult social and family relations including single status and teenage parenthood (48).

A qualitative study of 30 young Norwegian disability recipients, including their caseworkers and other stakeholders, indicated that the young adults could be divided into three main categories (49). The first involved social and/or mental problems, expressed by adjustment difficulties, including early alcohol debut, drug use, anxiety, eating disorders, self-harming and/or suicidal behavior. These individuals were further characterized by difficult childhoods, neglect, difficulties in school, and bullying. The second category was described as young adults with unspecific problems and many symptoms, including fatigue, fibromyalgia, and musculoskeletal illness, characterized by withdrawal and difficulties coping with challenges. These individuals' situations were not characterized by neglect, but rather by dysfunctional over-protection, and a family history of benefit recipiency. The third, and smallest, category involved young adults with clearly defined and often somatic diagnoses, including congenital and chromosomal disorders, sustained injuries e.g. due to accidents, and severe illness or disease (49). Based on the findings regarding non-medical and childhood factors, a follow-up study was conducted, emphasizing deficiencies in the preventive system for children at risk as an important problem among this group (50).

Early withdrawal or exclusion from the labor market represents long remaining lives spent outside the working society, with lower income and the added risk factors of unemployment as discussed in section 1.1.3. The increasing rates of young disability recipients becomes especially relevant when seen in the context of the aging of the Norwegian population (51), causing worry about the available workforce and the need of work capacity in the upcoming years. The public debate in Norwegian media has targeted the increase of young disabled from different angles, ranging from discussions of blame to calls for social and political responsibility. This was illustrated by an opinion piece by the Norwegian prime minister in 2017, answering to criticism toward the government's efforts to tackle early disability and stating that the issue is being taken seriously though increased efforts, such as establishment of lifelong rights to upper secondary education and prioritizing unemployed youth in vocational rehabilitation interventions (52).

The high prevalence of mental and behavioral disorders and early exclusion from the labor market is not unique in a Norwegian context. Neuro-psychiatric disorders, mainly unipolar major depression, are in general the main cause for years lost to disability among youth worldwide (45%), especially in high income-countries (68%) (53). Youth unemployment is increasing across Europe (54), and the growing amount of young people who are neither in employment, education, or training, abbreviated as NEET, cause worry about societal costs, as well as behavioral and health-related effects on the individual (55).

1.1.6. Young people not in employment, education, or training (NEET)

The term NEET emerged in the UK in the mid-90s and was formally introduced at the political level in 1999 (56), after which it quickly gained popularity in the European policy vocabulary. As a broad measure of the population of young people who are not accumulating human capital through formal channels, the term was a more clarified and perceivably less derogative alternative to previous terms (57). NEETs are a heterogeneous population, including subgroups with different characteristics and needs, reasons and motivations. While some are conventionally unemployed and inactive for shorter periods of time, others represent more vulnerable groups at higher risk of prolonged or even lifelong disengagement. Different classifications of subgroups exist, but the following seven categories have been suggested based on data from the EU Labor Force Survey (57):

1) Re-entrants (have been hired or enrolled and will soon enter employment, education, or training)
2) Short-term unemployed (unemployed and seeking work for less than a year)
3) Long-term unemployed (unemployed and seeking work for more than a year)

4) Unavailable due to illness or disability (not seeking work due to health problems)
5) Unavailable due to family responsibilities (not seeking work due to care for children or other family responsibilities)
6) Discouraged workers (believe there are no work opportunities and have given up efforts to seek work)
7) Other inactive (residual heterogeneous category)

Risk factors for NEET status are similar to that of early disability benefits, and demographic and socioeconomic factors are especially important. The most important individual risk factor is low educational attainment, followed by immigrant background, living in remote areas and small cities, and poor self-perceived health (45). Several important risk factors are also related to family background, including having parents with low levels of education, divorced parents, parents who have experienced unemployment, and low household income (45). Frequent cannabis use, repeated disruptive behaviors, and persistent common mental disorders, are also associated with NEET status (58). Furthermore, increasing individualization of school-to-work trajectories and a breakdown of traditional class-based routes to secure employment in the modern labor market has made the individual more responsible for navigating their way through transitions to work (59). Having uncertain aspirations about future employment, or having aspirations that exceed educational expectations, has been associated with broken transition phases and increased likelihood of becoming NEET, and this is especially true for young men with low socioeconomic status (59).

Having NEET status in early adulthood can have severe consequences for later participation and attachment to working life, both on the short- and long-term. A Swedish birth cohort study found that being NEET was associated with future exclusion from the labor market (60). The study utilized propensity score matching to account for a large number of risk factors, involving health indicators, geographical location, family and living conditions, cognitive ability, educational achievement and behavior, and found that the effect of NEET status was not primarily driven by previous resource deficiency but seems to have an independent effect for both genders (60). The effect was larger in the younger cohorts, and was especially visible among the men. A longitudinal Scottish study also showed that being NEET was a strong marker of later negative occupational outcomes, and that these “scarring effects” were variable between genders and different levels of education (61).

Rates of NEET status for people aged 15-29 averaged at 14.8% across the European Union in 2015, with the highest rates observed in Greece and Italy (57). Norwegian rates are around 7-9% (62, 63), which is comparable to the lowest scoring EU countries, namely Sweden, Denmark, Luxembourg and the Netherlands, which are generally characterized by lower unemployment rates (64). Meanwhile, it is estimated that one in five Norwegian NEETs still hold NEET status five years later, out of which 40% are receiving health-related benefits (62). When looking closer at those who remain NEET for five consecutive years and are receiving health-related benefits, 94% are still receiving these benefits after the five-year period (62). While treatment aiming to reduce symptoms is important for improving functioning, symptom reduction alone does not appear to be sufficient for reengagement of NEETs, and holistic services that integrate vocational support are needed in order to promote participation in employment or education (65, 66).

Various re-engagement programs targeting NEETs have been investigated, including basic or social skills training, educational classroom-based training, vocational training, counselling or one-to-one support, internships or placements, on-the-job training, financial incentives, case management, and individually tailored support (55). When looking at the effect of such programs on employment outcomes, Mawn et al. (55) found that common features for successful interventions were that they were multi-component and high-contact approaches, with inclusion criteria targeting deprived individuals. The amount and quality of evidence is however limited and insufficient to generalize, leaving policy-makers with an inadequate basis for planning and prioritizing efforts targeting the NEET population (55).

1.1.7. Vocational rehabilitation

1.1.7.1. Train-then-place

Efforts to increase the labor market participation among various groups have traditionally followed a train-then-place approach, with stepwise services that focus on prevocational training (67). Individuals are to be trained and prepared in work-related tasks and/or job-seeking *before* attempting to enter the competitive labor market. Services may involve interview training, help writing résumés and job applications, unpaid or subsidized apprenticeships, make-work jobs, job clubs, or sheltered workshops. These approaches have long dominated the field of vocational rehabilitation, based on a common—and perhaps intuitive—belief that people need to be supported before they are ready to enter the competitive labor market (68). Artificial work or practice settings have however been criticized for being unmotivating and to rarely match peoples' interests (68). The prevocational training may translate poorly to actual work settings, and the low success rates of such traditional services in the existing literature (69) indicate that they are unsuccessful in reaching the last step of the stepwise process, namely competitive employment.

Traineeships is sheltered businesses represent a classic traditional train-then-place approach in Norway, that is only offered to individuals with particular challenges and impaired work capability that requires close and broad follow-up (70). This indicates that eligible participants have a relatively high risk of work disability, and when taking a closer look at merged data from national population registers (71), we see that 20% of young adults aged 18-30 who received sheltered traineeships in the county of Hordaland in 2011 (mean age 24 years, 59% men) had obtained disability pension three years later.

1.1.7.2. Place-then-train

The Supported Employment (SE) model was developed for people with severe developmental disabilities in the 1980s (72), as a reaction to the stepwise approaches to vocational rehabilitation (68). Following a place-then-train approach, the SE model instead sought to minimize the prevocational training and focus on integrated work settings, *while* providing time-unlimited support (73). SE focuses on achieving more direct placement into relevant paid work, matching the individuals' interests, avoiding artificial work training settings. The rationale is that one cannot predict the specific skills needed without knowing what type of employment a person will gain at a later point (68). In a place-then-train approach, the relevant skills and support can be identified and adjusted while the person is in an actual competitive job setting with real-life demands for performance (68).

1.1.8. Supported Employment (SE)

While a range of different employment schemes have been associated with the generic term "SE," some have still depended on traditional stepwise measures (including non-competitive work), thereby contradicting the model. In Norway, one example is Work with Assistance ("Arbeid med bistand") (70, 74), where subsidized work and traineeships are frequently used in the vocational rehabilitation. The need for standardization of the SE methodology led to the development of the Individual Placement and Support (IPS) model, which is now the most extensively described and studied approach within SE. It is not viewed as distinct to SE, but rather as a standardization and clear description of SE principles, facilitating scientific evaluation and evidence-based interventions of the model (75).

1.1.8.1. Individual Placement and Support (IPS)

IPS was developed by researchers at the Dartmouth Psychiatric Research Center, Dartmouth College (now at the IPS Employment Center, Rockville Institute, Westat). It was originally developed for people with severe mental illness (SMI), defined as psychotic disorders such as schizophrenia, or severe forms of mood disorders such as bipolar disorder, and the method integrated competitive employment as a part of the treatment for this group (68).

The key person in the intervention is the IPS specialist. When a person is enrolled in IPS, he or she is assigned to a trained IPS specialist who knows the local labor market well and provides close follow-up. The IPS specialists spend most their time outside the office, being out and about at workplaces building networks, meeting the clients where they are, and helping them actively to seek out potential jobs. While the role of a IPS specialist may involve new challenges and a level of follow-up that exceeds many traditional vocational rehabilitation services, the caseload for a full-time IPS specialist includes a maximum of 20 clients. The IPS specialist works as part of an IPS team consisting of at least two full-time IPS specialists and a team leader, who meet regularly to discuss their clients, share job leads, and cover for each other's caseloads when necessary (76).

The approach is strictly manualized and follows eight principles (76). Fidelity to the model is measured using the Evidence-based IPS Supported Employment Fidelity Scale, where programs are rated using specified scores ranging from 1-5 on questions related to staffing, organization and services (76). In the current 25 item version, programs with a score ≤ 73 are not considered to be IPS. Studies have shown that adherence to the manual is associated with better outcomes, with high fidelity programs achieving higher competitive employment rates (77, 78). Others have however found that differences between studies are small and that IPS has a clear effect regardless of fair vs. good vs. exemplary fidelity (69).

The eight principles of IPS emphasize zero exclusion, competitive employment, rapid job search, client preferences, long-term support, integrated services, systematic job development, and benefits counseling (79). The two latter principles are the newest additions to the model.

1. *Eligibility based on client choice (zero exclusion)*
   Any client who expresses a desire to work is eligible for IPS. This means that clients are not excluded because of factors such as evaluation of work readiness, poor work history, legal history, substance use, homelessness, symptoms of mental illness, or personal presentation (79). This principle is supported by research showing that IPS services are effective across client characteristics including work history, clinical and sociodemographic factors (80), and that practitioners are generally unsuccessful at predicting which clients will succeed in employment (68). Rather than evaluating their job readiness, clients should be encouraged to work, in line with a recovery-perspective on employment as a way for the individual to promote control in their life (81).

2. *Focus on competitive employment*

   IPS focuses on competitive employment, that is, regular jobs in the ordinary labor market, that pay regular wages. These are jobs that anyone can apply for regardless of disability status, and exclude make-work jobs, subsidized, volunteer, or sheltered work (68).

3. *Rapid job search*

   IPS specialists and clients should be actively searching for jobs soon after program entry, making face-to-face employer contact within one month of joining the program. While rapid job search does not necessarily translate to rapid job placement, it ensures that the job search process is initiated without delay and conveys that the IPS specialist believes in the client and takes his or her goals seriously (68).

4. *Attention to client preferences*

   Choices and decisions about work and what kind of support is needed are individualized and guided by client preferences. The IPS specialist and client spend the first weeks getting to know each other, and discuss the clients' interests, any strengths or experiences, and what he or she thinks is most important in a job. Key factors may include work schedule, location, level of supervision, and type of work environment (79). Finding the right job for the individual may require some creativity, and the goal is not to push the client into any job that may be available, but rather to find a good job match. The focus on client preferences is derived from the shared decision making perspective (82, 83), and is supported by research of associations between jobs that match individual preferences and longer job tenure (84, 85).

5. *Long-term individualized support*

   The support from the IPS specialist usually starts with weekly contacts which are reduced after employment and stabilization, but the support continues as long as the person wants assistance (76). Clients who get employed and later lose or quit their job, can go back to their IPS specialist and draw up a new plan to try again elsewhere. The support may also be related to practical, social, or symptom-related problems at the workplace, and may involve contacting other practitioners, family members, coworkers, or supervisors in supporting the person and help them to continue working (68). Some clients need long follow-up periods before positive effects emerge (86), and the ongoing support has been indicated as a primary factor for success as perceived by clients (87).

6. *IPS integrated with treatment*
   Being originally developed for people with SMI, IPS integrates employment as a part of mental health treatment. While mental health and vocational services have traditionally been separated (68), the principle of a multidisciplinary team approach is derived from the Assertive Community Treatment (ACT) model (88, 89). The IPS specialist works in cooperation with a mental health treatment team including case managers, therapists and psychiatrists, who meet weekly, and ideally share office space (76). The team discusses their individual clients together to reach agreements on how to move forward. Coordinated services are important to avoid contradicting advice and efforts, and to ensure that services are integrated and working together toward a mutual goal.

7. *Benefits counseling included*
   IPS also incorporates comprehensive and personalized benefits planning. This includes information about work incentives and how employment may affect receipt of benefits, in order for the client to make informed decisions about starting to work and what changes it might involve for their financial situation (76). Benefits counseling was rated as a critical ingredient in SE services in a study of opinions among experts and practitioners (90), and has been associated with increased earnings among recipients of social security disability in the US (91).

8. *Systematic job development*
   IPS specialists should not rely on searching for jobs online, but work to develop a network with local employers. Systematic job development involves making multiple visits in person, to understand the individual business' needs and the employer's hiring preferences. The aim is to make a good job match that benefits both the employer and job seeker, and may include introducing job seekers before job openings are advertised (76). While this principle is the most recent addition

to the model, it is grounded in early research illustrating that people with SMI have difficulty with self-directed job searches and that most clients may need direct assistance in the process of finding a job and making contact with employers (73).

The IPS principles communicate an ideology that everyone with an expressed desire to work can find a regular work somewhere in the community, and that no one should be deprived of the opportunity to do so. It is based on a belief that people with severe psychiatric diagnoses can hold a normal job in the competitive labor market, as long as one finds the right job and work environment for the individual (92). The approach thereby challenges common assumptions that people with SMI cannot or should not work outside sheltered environments before recovery from symptoms and assessment of readiness (67). The large and growing evidence-base for IPS has shown that patients with SMI can indeed achieve work in competitive employment, without detrimental effects on health and well-being (93). IPS is more successful at achieving competitive employment for people with SMI than treatment as usual, and there is emerging evidence that the model may be generalized to target new groups (94, 95). In the following, I will describe the existing studies on the effectiveness of IPS, which to date include 26 randomized controlled trials (RCTs) on IPS for people with SMI, and studies looking at IPS for various subgroups with SMI as well as new populations.

1.1.8.2. Existing research on the effect of IPS for people with severe mental illness

The majority of RCTs evaluating the effect of IPS for patients with SMI have been conducted in North America (96-108), although a growing amount of trials have been conducted in European countries (109-114), along with a few in Australia (115-117), and Asia (118-121). Figure 4 provides an overview of the competitive employment rates found in these studies, that is, the percentage employed at any time in each study condition. It shows consistently higher competitive employment rates for IPS than control conditions, at 55% vs. 24%. Control conditions are mainly traditional vocational rehabilitation services and treatment as usual, and follow-up points range from six months to five years. European trials have shown somewhat lower mean rates than those in the US context, namely 44 vs. 20% in favor of IPS compared to 61 vs. 28%, respectively. The overall effectiveness of IPS has however been demonstrated independently of geographic location and unemployment rates (122).

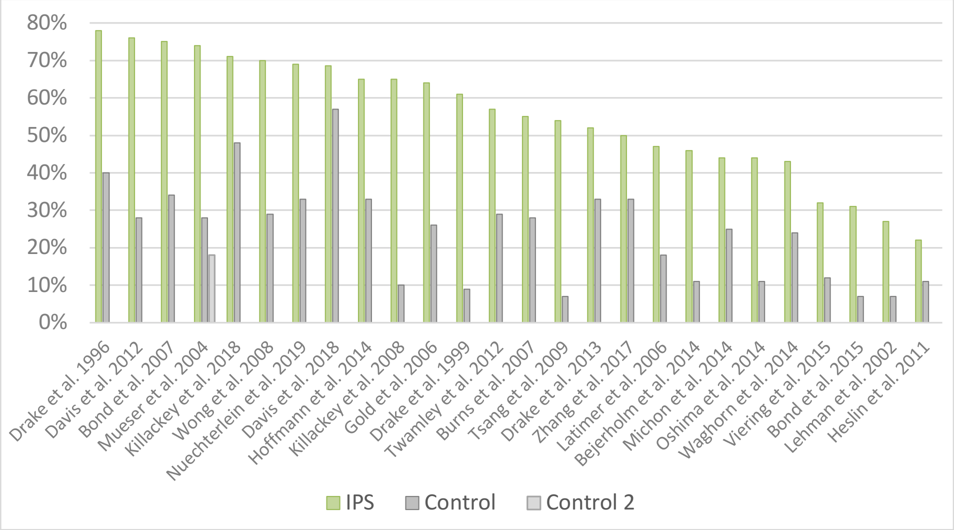

Figure 4: Employment rates of RCTs comparing IPS vs. control conditions for people with SMI, adapted from the IPS Employment Center, 2018 (123).

In addition to the studies included above, the first Norwegian IPS-trial which was recently published (124, 125), represents an exception to the remaining studies in figure 4 as it included patients with moderate mental illness in addition to SMI. The study was a large (N=410) multicenter RCT in six Norwegian counties, and found significant positive effects in favor of IPS (125). Using objective register data, competitive employment rates were 36.6% for IPS and 27.1% for high-quality usual care at 12-month follow-up. Self-reported employment rate was also measured in order to compare the results to previous trials, and showed rates of 41 vs. 28% respectively. The study found no difference between the diagnostic subgroups of moderate and severe mental illness. Although Norwegian labor and disability regulations are characterized by factors which may reduce the relative efficacy of IPS (126), the study shows that IPS is also effective in the Norwegian context with high job security and a generous welfare system (125).

While the existing research provides strong evidence for the effectiveness of IPS on competitive employment rates, this outcome has commonly been criticized for being a simplistic measure too crude to capture the many aspects of employment (127). Although the measure of competitive employment rate is the most widely used outcome in IPS studies, other common vocational outcomes include job acquisition (which in addition to employment rate includes time from enrollment to first job), job duration (duration worked in any job, or tenure in the longest-held job), job intensity (average hours worked per week, or ever working ≥ 20 hours per week), and total hours or wages (127). Reviews have found that IPS is consistently favored across the different outcomes, and that the competitive employment rate—although simple and imperfect—is a useful general-purpose measure working as a proxy for other employment measures (127, 128).

Information about the long-term effects of IPS is however limited, and the need for extended follow-up studies has been pointed out in the literature (128). A couple of interview-studies have looked at the 8 and 12-year course of participants previously enrolled in IPS (86, 87), and although findings appear positive, these studies are not controlled and there are several limitations to generalizability. More recently, evidence has begun to emerge from studies comparing IPS to control groups on long-term follow-up, showing beneficial effects of SE or IPS on vocational outcomes with follow-up periods ranging from 5 to 8 years (112, 129). The evidence-base for long-term effects is however still scarce, and more studies are needed to provide insight into the trajectories of participants over time and to see whether the results from the exiting long-term studies hold up.

1.1.8.2.1. Non-vocational outcomes

Some trials have looked at non-vocational outcomes of competitive employment for patients with SMI. Gaining employment has been consistently associated with improved self-esteem in three out of three studies and reductions in use of outpatient services or mental health service costs in four out of four studies, and inconsistently associated with improvements in mainly psychiatric symptoms/mental health, but also in function, medication use, life satisfaction, and psychiatric hospitalization (93, 113, 130). The studies did not find any effect on other non-vocational outcomes including substance abuse and living situation, but none of the studies showed negative effects of employment on any of the outcomes (93).

While these results concern effects of employment—rather than intervention group—a few IPS-trials have analyzed the effect of the IPS-intervention itself on such non-vocational outcomes. Most have been unable to find any such differences between the IPS and control groups (97, 100, 101, 106, 109, 111, 113, 120, 131, 132). There are several plausible explanations to the general lack of between-group effects on non-vocational outcomes in studies of IPS. Such effects are more likely to be related to employment rather than to the IPS services themselves (128, 133), and although IPS produces higher employment rates than control conditions the participation in IPS alone may be insufficient to have effect on non-vocational outcomes. Furthermore, beneficial effects on non-vocational outcomes may not occur on the short term, but rather as a result of working steadily in a competitive job over time (133, 134). A few studies have however found some positive results favoring IPS on non-vocational outcomes. Latimer et al. (104) found an increase in self-esteem in the IPS group, but no significant differences in functioning, symptoms, social network, quality of life, and substance abuse during 12-month follow-up. Drake et al. (102) found greater improvements in mental health and life satisfaction, but not physical health, among participants receiving IPS combined with systematic medication management and other behavioral health services during 24-month follow-up. Burns et al. (110) found the IPS group less likely to be admitted to hospital and to spend less time in hospital during 18 months, and Hoffman et al. (112) similarly found that IPS group had fewer and shorter admissions in hospitals and psychiatric hospitals at five-years, but no significant differences in recovery attitudes or quality of life. Meanwhile, the recently finalized Norwegian trial also measured a range of non-vocational outcomes including physical and mental health, disability, health-related quality of life and global well-being, and found positive results in favor of IPS on all of these outcomes (125).

1.1.8.3. IPS targeting new groups

A meta-analysis investigating a wide range of subgroups within patients with SMI, showed that IPS was effective across various subgroups defined by work history, sociodemographic, and clinical variables (80), including e.g. gender, race/ethnicity, education level, substance abuse, homelessness, type of diagnosis, symptomatology, and type of disability benefit recipiency. The existing IPS trials have also shown effect in different groups of people with SMI, such as people with criminal justice involvement (97), veterans with PTSD (98, 99), middle aged and older adults (108), and young adults with early psychosis (135), and secondary analyses of pooled samples from previous RCTs have suggested that IPS may be highly effective for young adults (136). The large evidence-base for IPS, along with the findings that IPS is effective regardless of demographic, clinical, and employment characteristics within patients with SMI (80), provides rationale for investigating whether the methodology is effective across new and different patient and social groups.

The evidence for IPS in non-psychiatric populations is however scarce, and repurposing the methodology to new populations involves making relevant adaptions to the evidence-based model, which in turn may reduce generalizability of the effect (137). Meanwhile, a few studies have implemented IPS for various new patient groups. These include Reme et al. which found that CBT supplemented with IPS for participants requesting job support was effective in increasing competitive employment among people with common mental disorders (138, 139), and a study by Hellström et al. (140) which did not find significant results using a modified IPS intervention for a similar patient group. A study by Bejerholm et al. found (141) that IPS enhanced with motivational interviewing and cognitive strategies was effective for people with affective disorders, and studies by Lones et al. (142) and LePage et al. (143) found that IPS and modified IPS was effective for people with substance use disorders. Finally, Ottomanelli et al. (144) found IPS to be effective compared to treatment as usual for veterans with spinal cord injuries and traumatic brain injury. A recent systematic review of IPS for new populations concluded that the evidence is generally positive and appears encouraging, although it is limited by few studies and generally low sample sizes (95). Meanwhile, we await results from several ongoing Norwegian studies implementing IPS for new patient groups, including patients with chronic pain (145) which showed promising results in a pilot study (146), and newly arrived refugees (147), while the current thesis focuses on young adults at risk of early work disability due to various social and health-related problems.

1.2. Theoretical framework

While the principles of IPS draw on various perspectives and models, they are ultimately empirically based. Most studies on IPS implementation are also empirically driven, and lack a clear theoretical underpinning (148). Meanwhile, discussing these services in the context of relevant theories can help facilitate the understanding and discussion of factors that influence individuals' experiences and behaviors in the process of vocational rehabilitation.

The theoretical framework of the thesis incorporates elements from the recovery perspective and ecological systems theory, and psychological theory of motivation, learning and coping. The theories and perspectives are interrelated, and come together with the literature reviewed in the previous chapter to form the basis for the aim of the thesis.

1.2.1. The recovery model and IPS

From a medical viewpoint, recovery from a health problem may involve the elimination of symptoms, and a return to the state of functionality existing before the onset of an illness or disease (81, 149, 150). While such a conceptualization may be suitable to describe acute conditions, it is insufficient to describe more chronic health problems (81). For instance, it does not account for cases where symptoms may be substantially reduced while the health problem still exists, or where the health problem has caused permanent impairment but there may still be room for improved function (81). Historically, this has been particularly relevant in the understanding of psychiatry, and especially schizophrenia, traditionally characterized by a focus on psychopathology and viewed as a deteriorative condition (151). These traditional views were challenged by the recovery or consumer-survivor movement which gained momentum in the 1980s and 1990s, combined with emerging evidence from the first long-term studies demonstrating positive outcomes in symptoms and psychosocial functioning among individuals with SMI (81, 152). In a recovery perspective, the emphasis is placed on the process of managing illness and pursuing a personally meaningful life in the community (150), making recovery possible even without cure or return to the premorbid level of functioning (81). The possibility of *recovery in illness* offers a more inclusive and complimentary perspective to *recovery from illness*, and emphasizes the individual's right to self-determination and inclusion in community in spite of symptoms (153). Recovery can be defined as "a process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential" (154, p. 3), and does not only concern clinical and physical recovery, but also *existential* recovery related to hope and empowerment, *functional* recovery such as obtaining and maintaining employment and education, and *social* recovery involving meaningful relationships and integration (149). As a resource for consumers, policy-makers, providers, and other stakeholders involved in the management of mental and substance abuse disorders, the American Substance Abuse and Mental Health Services Administration (SAMHSA) developed ten guiding principles of recovery, stating that: Recovery emerges from hope; is person-driven; occurs via many pathways; is holistic; is supported by peers and allies; is supported through relationship and social networks; is based on respect; is culturally based and influenced; addresses trauma; and involves individual, family, and community strengths and responsibility (154).

Recovery is thereby not limited to the individual, but involves relationships with the community and wider society. This can be viewed in context of a social ecological model, as proposed by Bronfenbrenner in the ecological systems theory (155). According to the ecological systems theory, environmental systems surrounding the individual can be classified as the microsystem (the immediate environment that the individual interacts with directly, such as family, friends, school and workplace); the mesosystem (the interrelations between microsystems); the exosystem (the interrelations between settings that the person is not directly involved in and his or her immediate environment, such as local policies and the quality and characteristics of educational, health, and social systems); and the macrosystem (overarching patterns of the culture or subculture, of which the micro-, meso-, and exosystems are concrete manifestations) (155). The ecological environment is thus a nested set of environmental structures, much like a Russian matryoshka doll, with the individual at the innermost level (155). The theory was later modified and expanded to what is now known as the bioecological model, with more focus on processes over time and human development during the life course (156). The symbiotic relationship between the individual and its environmental systems does however remain essential, viewing the person as a dynamic entity that is not only impacted by the environment, but also interacts with, affects, and restructures his or her own surroundings (155, 156). It corresponds to the view of recovery as a process in which the developing person improves in existential, functional, and social recovery, though participation in society and with the influence of environmental factors such as culture and social networks (149, 154).

Recognizing a recovery model has implications for treatment and rehabilitation, because it views traditional top-down approaches as unhelpful and calls for self-determination and autonomy, a focus on individual strengths and responsibility, and a holistic view on recovery, in order to help the person develop a sense of control over treatment as well as other aspects of life (81). IPS is a recovery-oriented approach that incorporates principles of recovery into its principles, by regarding the individual's preferences and choices, pursuing meaningful employment in ordinary work settings, providing individualized and long-term support, and making employment part of an integrated treatment approach. While IPS services were originally developed for patients suffering from SMI, these recovery-oriented and person-centered elements can be seen in connection with broader concepts relevant across different patient and social groups, related to motivation, learning and coping.

1.2.2. The self determination theory of motivation

The self-determination theory (SDT) is an empirically based theory of motivation (157), that has been widely applied within different life domains such as family and relationships (158, 159), education (160, 161), work and organization (162, 163), and health care (164). Rather than focusing on *amount* of motivation, SDT is concerned with *type* of motivation, distinguishing between autonomous and controlled motivation. The former involves both intrinsic motivation (e.g. performing an activity because it is enjoyable and interesting in itself) and those types of extrinsic motivation that the individual has identified with or integrated into his or her sense of self (e.g. studying to achieve results that are considered important for personal desires and wellbeing, or because doing well aligns with personal beliefs and values).

Controlled motivation, on the other hand, involves external regulation such as reward or punishment, and introjected regulation which is driven by approval motives, avoidance, shame, or ego-involvements (165). Studies have consistently shown autonomous motivation to be associated with greater well-being, and positive outcomes related to affect, performance, and persistence (165). The SDT further postulates that humans have three basic psychological needs—the needs for competence, autonomy, and relatedness—and that social contexts that facilitate satisfaction of these needs promote autonomous motivation (165). *The need for autonomy* concerns the need to self-regulate one's own experiences and actions, where behaviors are self-endorsed or congruent with the individual's interests and values, as opposed to being regulated by external forces or nonintegrated aspects of the individual's personality (166). *The need for competence* is related to feeling mastery and to be able to operate effectively within important contexts of life (166), and is an inherent striving that energizes behaviors from play and exploration to the pursuit of skills and achievements (167). *The need for relatedness* involves feeling socially connected, and includes being cared for by others, as well as belonging in the sense of feeling significant to others and contributing to social groups (166).

Findings that autonomous motivation is related to more effective performance, well-being, and healthy development than controlled motivation, and that frustration of the basic needs can undermine motivation and negatively affect performance and well-being (168, 169), have led to application of SDT in organizational settings. In this context, SDT is used to facilitate profitability and support well-being of employees, but also offers important implications for vocational rehabilitation efforts. For instance, the need for autonomy can be supported by acknowledging the individual's perspective and offering opportunities for choice in the vocational rehabilitation process, as well as pursuing work settings that provide autonomy support and are in agreement with the individual's integrated sense of self (163). Perceived competence can be thwarted by challenges that are not matched to the individual's capacities (167), as situations that are too challenging relative to skill level may lead to anxiety and disengagement, while too simple and undemanding situations may lead to boredom and alienation (170). Furthermore, studies of task significance and motivation have shown the importance of having a job in which the employee understands how the work benefits others, facilitating the need for relatedness (171). According to a SDT perspective, services aiming to motivate and assist clients in attaining employment should thereby be designed to promote internalization and autonomous behavior and support the basic psychological needs of autonomy, competence and relatedness (163), by offering relevant and socially meaningful work that matches the individual's interests and capabilities.

1.2.3. Stress, coping and outcome expectancies

Entering or returning to employment after having been outside the labor market involves adaption to change and exposure to what may be stressful situations. The concept of stress is ambiguous and may refer to different types of challenges, to how the individual responds to these challenges, or to the following consequences. Hans Selye, who is generally acknowledged for the development of the stress concept, therefore differentiated between *stressor* as the acting agent, and *stress* as the nonspecific response (172). He also distinguished between eustress, experienced as agreeable or beneficial, as opposed to the negative form of stress termed distress (172).

This distinction is recognized in the Cognitive Activation Theory of Stress (CATS) which does not necessarily regard exposure to stress as negative, but as a natural process necessary for training and survival, depending on whether the individual copes with the situation (27, 173). Stress is defined by four main aspects: the *stress stimuli* or stressor; the stress *experience*, where the stimuli is evaluated or filtered by the brain; the stress *response*, which involves an increase in arousal and activation; and the *feedback* from the stress response to the brain. The CATS is built upon learning theory and puts particular emphasis on the individual's expectancies, namely his or her expectations to the stress stimuli (based on classical conditioning), and expectations to the outcome of responses available for coping with it (based on operant conditioning). Response outcome expectancies can be positive (which is defined as coping, e.g. "I will be able to solve this"), negative (defined as hopelessness, e.g. "anything I do will make things worse") or none (defined as helplessness, e.g. "nothing I do will make a difference"). When considering the responses to and consequences of stress, the theory places the importance on these perceived relationships between response and outcome, rather than on the "objectively" true probability (27).

Other coping theories deal with similar phenomena, but focus on different aspects of coping. One such influential theory was introduced by Lazarus and Folkman (174) and concerns *coping strategies*, measured by the ways of coping checklist (175). While CATS focuses on *whether the individual copes or not*, Lazarus and Folkman focus on *how* individuals cope, differentiating between problem-focused and emotion-focused coping strategies (174). According to CATS, behavioral coping strategies do however not predict the internal state of the individual, and therefore do not predict the potential health effects of stress (27). CATS argues that coping only predicts relations to health and disease when defined as response outcome expectancies, and that lack of coping can lead to a sustained arousal which poses a potential health risk through pathophysiological processes (27). The concept of *self-efficacy*, introduced by Bandura, concerns the individuals' own perception of "how well one can execute courses of action required to deal with prospective situations" (176, p. 122), and is closely related to CATS. Self-efficacy is however most commonly *specific*, that is, related to one particular context or situation, while CATS concerns expectancies that are *generalized* across different contexts and situations (27). When generalized (177), self-efficacy becomes identical to the concept of coping in CATS (27).

Being grounded in learning theory, the CATS cognitively reformulates learning as the acquisition of expectancies (27). Positive experiences with facing stress stimuli and coping with them can be generalized and form the basis for positive expectancies when facing future challenges. From a traditional vocational rehabilitation perspective, competitive employment has however been treated as a stressor from which patients should be sheltered while they undergo treatment, or prevocational training and preparation. Communicating that recovery and training are prerequisites to employment, may promote negative expectations for work in the individual by suggesting that he or she is not ready, or that ordinary employment may conflict with treatment for their illness. Conversely, the ideology behind IPS aligns well with several points in the CATS. Encouraging people with severe diagnoses to take part in the ordinary labor market as a part of the recovery process, while providing support when needed, communicates that work is not dangerous. Exposing people to real-life work-experiences that are matched to the individual’s interests and capabilities may further facilitate positive experiences and thereby promote both motivation and coping.

Based on the existing literature on IPS and the theoretical framework of the thesis concerning promotion of recovery, motivation, and coping, there is reason to believe that the principles of IPS may be applicable across different patient and social groups.

2. AIM AND OBJECTIVES

The overall aim of the thesis was *to generate knowledge about young adults at risk of early work disability in Norway, and whether the Individual Placement and Support (IPS) model of supported employment may help this group enter the ordinary labor market*.

The specific objectives for each of the included papers were as follows:

- To design and prepare a randomized controlled trial to evaluate the effectiveness of repurposing IPS to young adults at risk of early work disability due to various social or health-related problems (paper I).
- To investigate social and health-related characteristics in young adults at risk of early work disability in Norway, and what they believe may have caused their illness (paper II).
- To evaluate the effectiveness of IPS versus traditional vocational rehabilitation for young adults at risk of early work disability, on outcomes of competitive employment, and physical and mental health and well-being (paper III).

3. DESIGN, MATERIAL AND METHODS

3.1. Design

The data in this thesis is based on the project *Supported Employment and preventing Early Disability* (the SEED-trial). It is a two-arm randomized controlled trial (figure 5), comparing an intervention group receiving IPS to a control group receiving traditional vocational rehabilitation, for young adults at risk of early work disability.

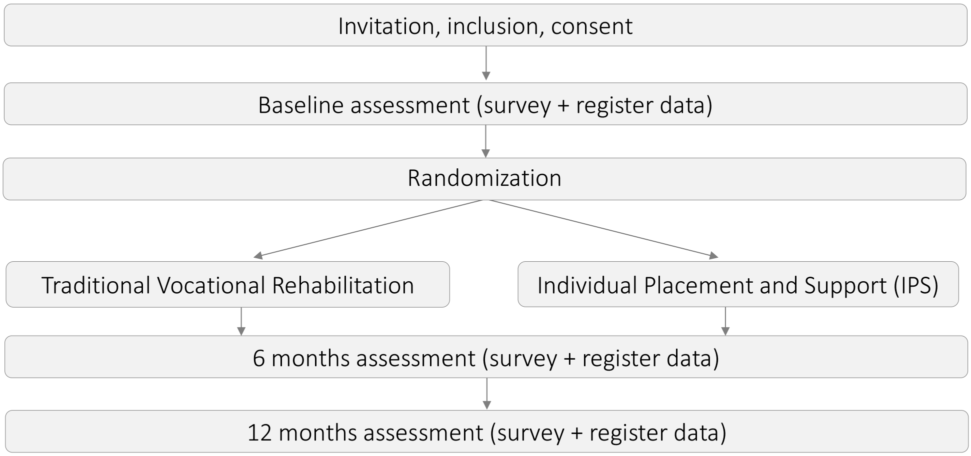

Figure 5: The study design

The project was funded by the Research Council of Norway (RCN) (program for Sickness Absence, Work and Health) in 2013 and the project period lasted to July 2018, while long-term follow-up using register data will continue in the upcoming years.

3.2. Participants and sample size

Participants were young adults aged 18-29 at year of inclusion, who were not in employment or education, were receiving temporary benefits from the Norwegian Labor and Welfare Administration due to various social or health-related problems, and who were considered by their caseworker to be eligible for the traditional vocational rehabilitation intervention “traineeship in a sheltered business.” Eligibility for this employment scheme implies that the person has considerable challenges, as it is only offered to those with impaired work capability who have particularly uncertain professional abilities, and who require close and broad supervision and assistance (70). The study invited all eligible referrals from nine local labor and welfare offices in and around Bergen, Norway, during the inclusion period (June 2014 through December 2016). Exclusion criteria were insufficient language skills to answer questionnaires in Norwegian, and no expressed interest in help to obtain work. There were no exclusion criteria regarding type of social or health-related problems or diagnosis.

Sample sizes differed between the three papers. In paper I, an estimated sample size of 124 participants was proposed based on sample size calculations. Paper II had a sample size of 96 participants who fulfilled the inclusion criteria, were included in the study, and answered questionnaires at baseline. Paper III included 69 respondents at 6-month follow-up, followed by 83 respondents to the primary outcome and 61 respondents to the secondary outcomes at 12-month follow-up.

3.3. Recruitment and randomization

Eligible participants were referred to information meetings by a senior advisor at the central labor and welfare office, by their caseworkers in the local labor and welfare offices, or by staff at a secondary care district psychiatric center with subsequent follow-up at the local labor and welfare office.

The information meetings were arranged upon referral of new eligible participants throughout the recruitment period, usually every other week. The meetings lasted approximately an hour, and were arranged as joint or individual meetings, based on individual preferences. At the information meetings, the project coordinator provided detailed verbal and written information about the SEED-trial, and an invitation to participate in the study. Those who expressed interest to join, where asked to read and sign an informed consent form, and the project coordinator recorded their personal information (name, contact details, and national identification number) and provided each participant with a consecutive ID-number.

After the meetings, the ID-numbers were randomized by staff at Uni Research Health, using premade computer-generated lists with a 1:1 randomization ratio. The randomization ratio was changed to 2:1 favoring IPS for a period of three months, in order to enable sufficient case-loads in the IPS intervention. Information about the outcome of the randomization was communicated by e-mail to the relevant caseworker at the local labor and welfare office, who contacted their client and the relevant vocational rehabilitation organization.

3.4. Interventions

The interventions that are compared in the SEED-trial represent classical interventions within the place-then-train and the train-then-place approach, respectively:

Individual Placement and Support (IPS)

The first group was referred to the vocational rehabilitation organization Fretex Vest-Norge, who offered IPS by two trained IPS specialists who were appointed specifically to work with participants in the SEED-trial, in addition to an IPS team leader. Based on a place-then-train approach, the follow-up was directed toward finding a good job match for the participant followed by continuous support after employment, without the use of stepwise prevocational training, subsidized or unpaid work. The intervention aimed to follow the principles of IPS (see section 1.1.8.1.), and the team was advised by an external IPS trainer who conducted biannual fidelity reviews using the Evidence-based IPS Supported Employment Fidelity Scale (76). Because the current study included a range of different social and health-related problems, the principle regarding integration with mental health treatment was not included in the follow-up by the IPS specialists in this trial. However, IPS specialists could contact various health care providers when relevant. Meanwhile, the fidelity reviews were conducted using the original fidelity scale, giving the lowest possible score on questions related to integration of services. The measurements thereby provide conservative measure in order to see whether the quality of implementation was sufficient to fulfill the criteria for IPS and be comparable to other IPS trials.

IPS was offered for up to a maximum of three years, with intensity and duration depending on individual needs and preferences.

Traditional Vocational Rehabilitation

The second group was referred to a traditional vocational rehabilitation organization, to receive a traineeship in a sheltered business. This intervention acted as a control condition and represented “service as usual” for the participants, who had all been considered eligible for this service. Traineeships in sheltered businesses involve work capability testing and preparatory work training in a sheltered environment, where the participant gets the opportunity to test different forms of work that are adapted to his or her skills and challenges, with close follow-up from an advisor and department supervisor. The services were delivered by different sheltered businesses in the municipality, offering work training in various departments such as canteens and catering, car repair, day-care services, upholstery and interior decoration, transport, laundry services, welding, and warehouse handling. Participants were allocated to the various departments according to the usual practice at the Norwegian Labor and Welfare Administration, which is based on the caseworker’s description of individual interests and goals, combined with considerations regarding availability and waiting lists. The goal of the intervention is to improve the opportunities for finding work, and involves follow-up aimed toward finding a job (70).

The traditional vocational rehabilitation was offered for up to a maximum of two years depending on the participant’s options on the labor market, according to usual practice. The usual intensity is full-time, with a minimum requirement of 50% of full-time (70).

3.5. Measures

The primary outcome of the SEED-trial was competitive employment during the first year after enrollment, while secondary outcomes involved physical and mental health and well-being, in addition to variables related to coping, social support, and health behaviors. Information was collected using survey data at baseline, 6 and 12-month follow-up.

Background information (papers I, II, and III)

Background measures related to demographics and social variables were included at the beginning of the baseline questionnaire, including gender, age, marital status, living arrangements, country of birth, number of children, education, reading and writing difficulties, treatment history, and history with work or vocational rehabilitation services. Follow-up questionnaires included questions about education or treatment history for the last six months.

Competitive employment (papers I and III)

Competitive employment was measured by a single item asking how many weeks, days, or hours the participant had worked in ordinary paid employment during the first 12 months after enrollment. Competitive employment was defined as ordinary paid work in the competitive labor market, at usual wages and with regular supervision. The competitive employment rate was the percentage of participants working *at any time during the follow-up period*. In addition, standardized indicators for rate of job acquisition, job duration, job intensity, and total hours worked, were included in the questionnaire to measure success in employment.

Alcohol and drug use (papers I, II, and III)

Alcohol use was measured with the Alcohol Use Disorders Identification Test (AUDIT-C) which consists of three items scored on 5-point scales from 0-4, forming a total sum-score ranging from 0-12 (178). It is a brief screening test for hazardous drinking and active alcohol use disorders, with cutoff-scores of ≥ 4 for men and ≥ 3 for women.

Drug use was measured with the Drug Use Disorders Identification Test (DUDIT) (179), which consists of eleven items forming a total sum-score ranging from 0-44. Items 1-9 were scored on 5-point scales from 0-4, and items 10-11 were scored on 3-point scales as 0, 2, and 4. The test screens for drug-related problems, with cutoff-scores of ≥ 6 for men and ≥ 2 for women. The follow-up questionnaires (used in paper III) only included the four first items measuring consumption (DUDIT-C) forming a total sum-score ranging from 0-16 (179, 180).

Bullying (papers I and II)

An eight-item questionnaire was developed in collaboration with researchers within the fields of bullying in school (Dan Olweus) and working life (Jørn Hetland) to measure experiences with bullying among individuals who are not currently involved in employment or educational activities.

Bullying victimization was measured with five single items, asking if the participant had been bullied by students or teachers during his/her time spent in school (2 items), by colleagues or leaders during his/her time in working life (2 items), and in any other social arenas (1 item). The items were preceded by a description of bullying according to the Olweus definition (181), stating that bullying included direct and indirect verbal and physical bullying, a perceived power imbalance or difficulty defending oneself, and that friendly teasing, fights or arguments between equal parts, was not defined as bullying. Items were scored on a 5-point scale from 0 (never or almost never), 1 (one short period (a few weeks)), 2 (several shorter periods), 3 (one long period (several months)), to 4 (several longer periods of my time in school/working life/other social arenas). Values within each arena (school, working life, other social arenas) were added together, and values ≥ 2 were coded as bullying in that arena, indicating bullying in at least several shorter periods. Based on these dichotomous variables for each arena, an overall dichotomous variable for bullying victimization in any arena vs. bullying in no arena was created.

Bullying perpetration was measured with three single items, corresponding to the items and scale for victimization as described above, but asking whether the respondent had bullied others in school (1 item), in working life (1 item), or in other social arenas (1 item). Values ≥ 2 were coded as bullying in that arena, indicating bullying perpetration in at least several shorter periods. Based on these dichotomous variables for each arena, an overall dichotomous variable for bullying perpetration in any arena vs. no arena was created.

Coping (papers I, II, and III)

Coping was measured with the Theoretically Originated Measure of the Cognitive Activation Theory of Stress (TOMCATS) (182), which consists of seven items forming three mean subscales: Coping (1 item), helplessness (3 items), and hopelessness (3 items). Items were scored on a 4-point scale from 1 (completely true) to 4 (not true at all), and items were reversed in order for higher scores to reflect higher degrees of coping, helplessness, or hopelessness.

Disability (papers I, II, and III)

Disability was measured with the self-administered WHO Disability Assessment Schedule 2.0 (WHODAS 2.0), which consists of 12 items based on six domains of life: Cognition (2 items), mobility (2 items), self-care (2 items), getting along (2 items), life activities (2 items), and participation (2 items), forming a total sum-score (183). Items were scored on a 5-point scale from 0 (none) to 4 (extreme or cannot do). We used the simple scoring strategy without weighting of individual items, and the total sum-score ranged from 0 (no disability) to 48 (full disability). In paper II, cut-off scores of ≥ 10 for significant disability were used based on the top 10% of the population in normative data (184).

Fatigue (papers I, II, and III)

Fatigue was measured with the Chalder Fatigue Questionnaire (CFQ) which consists of 11 items forming two subscales: Physical fatigue (7 items) and mental fatigue (4 items), and a total sum-score (185). Items were scored on a 4-point scale from 0 (less than usual) to 3 (much worse than usual). In paper II, an additional binary global fatigue score from 0-11 was created by scoring responses of 0-1 on each item as 0, and responses of 2-3 on each item as 1, with cut-off scores of ≥ 4 representing severe fatigue (185, 186).

Global well-being (papers II, and III)

Global well-being was measured with a 10-point Cantril Ladder Scale (187), which ranged from 1 (the worst life possible) to 10 (the best life possible). The scale asked respondents to indicate on which step of the ladder they felt they stood “right now,” on which step they would say they stood “one year ago,” and where they believed they would be “one year from now.” This measure was used as a replacement for the EQ-5D measuring quality of life which was described in paper I, in order to shorten the questionnaire.

Illness perceptions (papers I and II)

Illness perceptions were measured with the Brief Illness Perception Questionnaire (BIPQ), which consists of 9 items, each measuring a different dimension of illness perceptions: Consequences, timeline, personal control, treatment control, identity, concern, coherence, emotional representation, and a causal attribution item (188). Items 1-8 were scored on 11-point scales from 0-10, with higher scores reflecting increasingly negative illness perceptions. Item 9 was open-ended and concerned self-perceived causal attribution: “Please list in rank-order the three most important factors that you believe caused your illness.” Due to the characteristics of the study sample, the items were preceded by a comment telling participants who did not have any illness to skip this questionnaire.

Psychological distress (papers I, II, and III)

Psychological distress was measured with the Hopkins Symptom Checklist (HSCL-25), which consists of 25 items forming two mean subscales: Anxiety (10-items) and depression (15-items), and a mean sum-score (189, 190). Items were scored on a 4-point scale from 1 (no symptoms) to 4 (severe symptoms). In paper II, a cut-off score of ≥ 1.75 for psychological distress was used based on previous studies (191).

Sleep problems, insomnia (papers I and II)

Three single items were developed in collaboration with Mari Hysing, researcher within the field of mental health and sleep problems, to measure sleep problems according to the diagnostic criteria for insomnia in the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5) (192). The items addressed problems related to falling asleep, waking up at night, and/or waking up too early. Respondents were asked to indicate on a scale from 0-7 how many nights during a typical week they experienced each problem. In cases where any sleep problems were reported, respondents were asked to indicate how long the problems had lasted (less than a month, 1-3 months, more than 3 months), and how many nights a week the problems affected their daily life. A dichotomous variable for insomnia was computed based on whether sleep problems had lasted more than 3 months vs. not, and whether sleep problems affected daily life vs. not.

Social support (papers I and II)

Social support was measured with 11-items of the Nondirective and Directive Support Survey (193) as suggested by Øyeflaten et al. (194), forming two mean subscales: Directive social support (4 items) and nondirective social support (7 items). Items were scored on a 5-point scale from 1 (not at all typical) to 5 (very typical). Directive social support is instructive and involves taking charge of the situation in order to help, while nondirective social support is more cooperative and accepting toward the recipient's own thoughts and choices (194).

Subjective health complaints (papers I, II, and III)

Subjective health complaints were measured with the Subjective Health Complaints Inventory (SHC), which consists of 29 items forming five subscales: Musculoskeletal pain (8 items), pseudoneurology (7 items), gastrointestinal problems (7 items), allergy (5 items), and flu (2 items), and a total sum-score (195). Items were scored on a 4-point scale from 0 (no complaints) to 3 (serious complaints). Subscales for allergy and flu were not included in the analyses.

Violence (papers I and II)

Violence was measured with a single item asking whether participants had ever been the victim of violence inflicted by one or several other persons, excluding accidents and common childrens' fights. If yes, participants were further asked to indicate what types of violent acts they had experienced (being hit, robbery/assault, sexual abuse/violence, deprivation of liberty, severe threats, or other), and whether incidents were single or repeated.

Fidelity and process measures (IPS intervention only, paper III)

Adherence to the IPS model was assessed in five fidelity reviews conducted regularly throughout the project period by an external IPS trainer. Each review lasted for two days, and involved document review, calendar review, observations, and interviews of the different stakeholders. The program was scored on all 25 fidelity items of the standardized IPS fidelity manual (76), which ranges from 25 (minimum score) to 125 (exemplary fidelity). Scores of 73 and below do not fulfill the criteria for IPS.

Participants in the IPS group were presented with additional questions in the follow-up questionnaires, regarding adherence, barriers and facilitators, and satisfaction with the intervention. At 6-months, participants were asked whether or not they had initiated at least one of the goals they had set with their IPS specialist before the next meeting (to find references, draft their CV or job applications), and to indicate barriers and helpful factors for participating in the intervention. At both 6- and 12-months, participants were asked to indicate how satisfied they were with the intervention in general, how satisfied they were with their IPS specialist, and how useful it had been to participate in the intervention, on a 5-point scale.

Register data (paper I)

In addition to survey data, the SEED-trial includes register data on variables related to benefit recipiency, labor market participation, and educational activity, which will provide the basis for long-term follow-up for up to five years after enrollment as well as a cost-benefit analysis. These data do however have a time-lag and are not included in the thesis.

3.6. Data collection and management

Baseline questionnaires were completed at the information meetings and were available in both electronic and paper format. Participants had assistance throughout the process and received help and clarification upon request. In a few cases, the questionnaire was completed as an interview. Electronic responses were collected using iPads with secure survey software (Qualtrics, Provo, UT), and stored in a secure online database. Responses in paper format were entered manually after the meetings and sent to the same database, while the paper copies were stored in a locked filing cabinet. The identifier containing personal information and contact details for the participants, was stored in a locked and fireproof safe.

Follow-up questionnaires at 6 and 12 months were distributed via mail or e-mail, depending on the participant's preference. Electronic responses were collected using links to the same secure survey software as used for baseline questionnaires. Paper responses were returned using prepaid envelopes. Participants who did not respond to follow-up questionnaires or who provided ambiguous responses to the primary outcome, were contacted via telephone, text messages and e-mail in order to increase the response rate, and all who returned their questionnaires received two scratch lottery tickets as a small reimbursement for their time. In cases where information on the outcome of competitive employment remained missing, log-books from the IPS specialists were used to provide information on this outcome for participants in the intervention group.

3.7. Statistical methods

Statistical procedures were performed using IBM SPSS Statistics version 24 (196) (papers II and III) and StataIC version 15 (197) (paper III). Sample size calculations were performed using the Hmisc library in the in the statistical package R (198) (paper I).

3.7.1. Paper I

In paper one, sample size calculations were performed using input-data from previous IPS studies, with a competitive employment rate of 61% for IPS and 23% for control groups (199). Calculations were based on a 5% significance level and a power of 90%, and accounted for stratified analyses to enable comparisons of two subgroups.

Paper I also contained an analysis plan for the SEED-trial. For investigation of treatment effects, the plan included t-tests for comparison of groups on continuous outcome variables and chi-square tests for comparison of groups on categorical outcome variables. Logistic regression analysis was planned to investigate whether there was a moderating effect of e.g. gender. For register data on e.g. sick leave, the analysis plan included the possibility of generalized estimation equations (GEE) for repeated measures over time, to account for correlated data.

A strategy for cost-benefit analyses was also described, using a combination of survey and register data. Based on the outcome of the analyses of treatment effects, the cost-benefit analyses will be performed using a standard cost-benefit formula (200-202) as used by Hagen et al. (203). Costs will be measured by intervention costs and costs related to follow-up outside the intervention in both groups, and survey data on health and use of health-services. Benefit will be measured by any increase in labor market participation, and the productivity gains from employment as opposed to benefic recipiency.

The analysis plan stated that all analyses would follow the intention to treat (ITT) principle.

3.7.2. Paper II

In paper II, descriptive statistics on demographic, social and health-related variables were calculated for the total sample, and for each gender. Differences between genders were analyzed using chi square tests for dichotomous variables and independent t-tests for continuous variables.

Responses to the open-ended item in the brief illness perception questionnaire, which regarded participants' self-perceived causal attribution of illness, were categorized using thematic analysis as described by Joffe & Yardley, 2004 (204). Patterns within the responses were identified, and the data was categorized using a descriptive and inductive approach. Each category was defined and described in a coding manual (see supplementary material to paper II). The categorization was performed independently by a second author (SER), and inter-rater reliability was measured using Cohen's Kappa. In cases where categorizations differed, the relevant responses were discussed until consensus was reached.

Based on suggestions in the peer review process, two additional analyses were removed in order to reduce the comprehensive length and span of the paper. This included a multiple linear regression to investigate to what degree various health-related risk factors were associated with variance in level of disability, and whether adverse social experiences offered any additional explanation in the variance. A mediation analysis, investigating whether an association between bullying victimization and level of disability was mediated through level of psychological distress, was also removed for the same reason. We plan to present these analyses in a separate paper.

3.7.3. Paper III

The analyses in paper III corresponded to the analysis plan described in the study protocol, and available data was analyzed according to the randomized groups regardless of compliance per protocol. A diagram of participant flow was prepared to illustrate the enrollment and allocation of participants, and the response rate at baseline and follow-up.

Descriptive statistics on baseline demographic and health-related variables were calculated for the total sample and the two study groups. Baseline differences between the groups were analyzed using chi square tests for dichotomous outcomes and independent t-tests for continuous outcomes. Baseline differences between respondents and non-respondents to follow-up were also analyzed.

Differences between the study groups on the primary outcome at 12-month follow-up were analyzed using chi square test to compare crude employment rates, and odds ratio was calculated. Rates of participants working at least 20 hours in one week during follow-up were compared using the same procedure. Effect sizes for differences between proportions were calculated using the arcsine formula (205), to make them comparable to that of continuous variables. Total number of hours worked were compared using independent t-tests. Due to insufficient data, analyses on weeks from enrollment to first job and weeks worked at longest-held job were not conducted.

Differences between the study groups on secondary outcomes at 6- and 12-month follow-up were analyzed using independent t-tests. Due to multiple observations for participants at baseline, 6 and 12 months, and the lower response rates on secondary outcomes at follow-up, we also conducted post hoc mixed effect regression analyses with maximum likelihood estimation (MLE). In the mixed effect models with MLE, the estimated intra class correlation (ICC) is applied to adjust for missing observations. Using this approach accounts for complex structures of data missing at random (206).

Investigations of potential moderating effects were not included in paper III, but will be analyzed along with other potential predictor variables in a separate paper.

3.8. Ethical considerations

The SEED-trial was considered to not fall under the Health Research Act and thereby to be outside the remit of the Norwegian Regional Committees for Medical and Health Research Ethics (REC), who exempted the project. The project plan, including the methodology, study procedures, data collection, privacy and research ethics, was reviewed and approved by the Norwegian Social Science Data Services (project #38271). The study was registered in the international trial register ClinicalTrials.gov (NCT02375074) and the protocol paper was published in an international peer-reviewed journal, to provide a detailed account of design and methodology and make the ongoing research visible to the public. The study adheres to the ethical principles of the Declaration of Helsinki, and all participants signed a written informed consent form prior to enrollment. This included information about the project, all data that would be collected, and participants rights to confidentiality and to withdraw from the study at any time.

4. SUMMARY OF RESULTS

4.1. Paper I

The aim of paper I was to design and prepare a randomized controlled trial to evaluate the effectiveness of repurposing IPS to young adults at risk of early work disability due to various social or health-related problems.

The results of paper I were the development of the design, methodology and procedures for the SEED-trial, the first RCT to investigate the effectiveness of IPS for young adults at risk of early work disability due to various social or health-related problems.

The published study protocol provided a detailed account of the intensions for the study during the recruitment period and in advance of follow-up data collection, to ensure transparency, reproducibility, and visibility to the public.

4.2. Paper II

The aims of paper II were to investigate social and health-related characteristics in young adults at risk of early work disability in Norway, and what they believe may have caused their illness.

A total of 96 participants who fulfilled the inclusion criteria were included in the study and answered baseline questionnaires. The mean age of the sample was 24 years, and the majority were male, single, and childless. About half of the participants lived with their parent(s). One third reported having reading and writing difficulties, and 40% reported primary or lower secondary school as their highest level of education. The same amount had never held a job, and 64% had previously participated in vocational rehabilitation. More than half of participants (53%) reported hazardous drinking or active alcohol use disorders. Fifteen percent reported using any drugs, while 10% scored over the cut-off for drug-related problems. Men had higher levels of coping, while women received more nondirective social support from the person they turned to for support.

According to validated cutoff-values, 52% of participants had psychological distress and 42% were severely fatigued, while 32% had a severe level of disability. Women generally had more physical and mental health problems than men, and men more often reported non-health related reasons for unemployment. Half of participants had received treatment from a psychologist and/or psychiatrist during the last 6 months, and more women had received treatment than men. Women also had a higher belief in treatment being helpful for their illness and reported worrying more about their symptoms than did men.

The majority of participants reported adverse social experiences. Two thirds had experienced victimization by bullying, and 39% had been victims of violence.

While the response rate to the baseline questionnaire in general was complete for all participants, 75% percent responded to the BIPQ, indicating that they perceived themselves to have an illness. Open-ended responses about self-perceived causal attributions of illness were categorized into 15 categories, and the inter-rater reliability for the categorization was high (κ = .91). Causal attributions were mainly related to relational problems (e.g. loneliness, isolation, lack of adequate care, or loss of love or friendship). This was followed by health behaviors (e.g. “used various types of drugs”), heredity/genetics (e.g. “genetics”), and external environmental factors (e.g. “living situation”).

4.3. Paper III

The aim of paper III was to evaluate the effectiveness of IPS versus traditional vocational rehabilitation for young adults at risk of early work disability, on outcomes of competitive employment, and physical and mental health and well-being.

Competitive employment rates were 48% in the IPS group versus 8% in the control group, and the difference was statistically significant. Participants in the IPS group also reported working significantly more hours compared to the control group, and a significantly higher proportion of participants in the IPS group had worked more than 20 hours in one week during the past 12 months.

There were a few significant differences between the study groups in the unadjusted analyses on secondary health-related outcomes. At 6-month follow-up, participants in the IPS group reported significantly lower levels of subjective health complaints and lower levels of helplessness compared to the control group. At 12-month follow-up, participants in the IPS group reported significantly less hopelessness than participants in the control group. When adjusted for baseline and missing observations using mixed effects regression models with MLE, participants in the IPS group reported significantly less anxiety, subjective health complaints, pseudoneurology, helplessness and hopelessness, and drug use, compared to the control group at 6-month follow-up. At 12-month follow-up, effects on subjective health complaints, helplessness, hopelessness and drug use were maintained, and participants in the IPS group also showed significantly lower levels of disability and more optimism about future well-being compared to the control group.

Fidelity and process measures

The IPS program scored below the cut-off for IPS on two out of five fidelity reviews, but had a general increase up to a score of 77 at the last review, which is above the cut-off and signifies fair fidelity (76). Main issues with fidelity were explained by minimum scores on items measuring integration with mental health treatment, but were also related to poor scores on time-unlimited follow-along supports, assertive engagement and outreach, agency focus on competitive employment, and the proportion of time that IPS specialists spent on providing non-vocational services. Most participants in the IPS intervention reported having initiated the goals they had set with their IPS specialist after the first meetings, and were generally satisfied with their IPS specialist and the intervention. The main challenge for participation in IPS were challenges with illness, and the most helpful factors were the availability of the IPS specialist, and having the choice of whether or not to disclose their illness to employers or others.

5. DISCUSSION

The thesis aimed to generate knowledge about young adults at risk of early work disability in Norway, and whether the IPS model of supported employment may help them enter the ordinary labor market. This was done by investigating various social and health-related characteristics and comparing two contrasting vocational rehabilitation approaches, in a sample of NEETs with impaired work capability. Results showed a predominantly male group characterized by a high level of adverse social experiences, with mental health and relational problems emerging as especially relevant factors. IPS was more effective than traditional vocational rehabilitation in helping participants attain any competitive employment during 12 months after enrollment, and was also associated with improvements in some health-related outcomes.

5.1. Discussion of main findings and novel contributions

5.1.1. Social and health-related characteristics

Participants in the SEED-trial were young adults who were NEET and receiving temporary benefits due to impaired work capability, and had been considered by their individual case manager to be eligible for a sheltered intervention that implies particularly severe challenges. Based on these preconditions, the findings of health-related challenges among participants presented in paper II do not appear surprising. More than half of participants reported psychological distress exceeding the recommended cut-off signifying mental disorder (191), which corresponds to the most common reason for early work disability in Norway (42). The high prevalence of psychological distress, along with the gender distribution and low educational level, suggests that the sample is well aligned with those who have already reached the point of more permanent exclusion (41, 42, 48, 207). However, the more noteworthy findings are related to psychosocial stressors. The measure of bullying developed for use in this thesis concerns previous experiences with bullying across various social arenas, and is therefore difficult to compare to previous studies designed to measure recent bullying among individuals who are currently in employment or education. Nevertheless, the prevalence of bullying appeared exceptionally high, at 66% compared to 8% among the Norwegian school population (208). Experiences with violence, especially sexual violence among women, were also common. Previous findings from a Norwegian cross-national study have shown that youth who have weak attachments to their parents, friends, or school, are more likely to be bullied and to have depressive symptoms (209). Relational problems also emerged as prevalent among participants in the SEED-trial. Most participants who considered themselves to have an illness attributed it to relational factors, such as being lonely, isolated, lacking adequate care, or loosing love or friendship. Additional related categories of causal attributions that emerged in the results included bullying, childhood factors, and traumatic life events. While previous qualitative research has emphasized the importance of these factors among young disability recipients in Norway (49), the current study is the first to illustrate this aspect in quantitative terms for our target group. Such adverse social experiences are associated with a multitude of long-term consequences, including depression (210), psychosomatic problems (211), internalizing and externalizing problems (212, 213), aggression and violence (214). Youth who have experienced bullying or violence are also more likely to be unemployed later in life, when controlled for socioeconomic status (215). Some participants also reported bullying perpetration, or the combination of victimization and perpetration, which is considered an especially vulnerable group associated with problem behavior and adjustment problems (216, 217).

The level of alcohol consumption among participants was high, and more than half of participants reported hazardous drinking or active alcohol use disorders. Similar rates have been found among Norwegian college and university students (218), which may indicate that the excessive consumption is a societal problem, although it has previously been argued that cut-off levels for student populations may be too low to have predictive value for adverse consequences (218). High alcohol consumption may however be more worrying among individuals who are inactive in terms of education or employment. In addition to having harmful effects on health, substance abuse among NEETs can make it more difficult to obtain and hold a job (45), especially in cases of concurrent mental health problems (219). Early unemployment is associated with general high-risk behavior (220, 221), including drug use which was five times more prevalent among participant in the current study compared to normative data (222). Poor health-behaviors, such as using drugs, was also the second most common causal attribution of illness reported by participants.

The gender differences found in coping, social support, illness perceptions, and treatment seeking, may be viewed in light of previous research showing that women are somewhat more prone to ruminate over symptoms and distress compared to men (223), and that genders differ in terms of how beliefs about illness relate to coping (224). Women received more nondirective social support than men, which might be because they seek this type of cooperative and accepting support to a larger degree, or because their support person considers this form of support to be more relevant for their situation than directive and instructive supports. Along with the finding that women reported more health problems while men more often reported non-health related reasons for unemployment, this may indicate different needs in the vocational rehabilitation process among men and women.

5.1.2. Effectiveness of IPS versus traditional vocational rehabilitation

The findings presented in paper III showed that IPS was superior to the control condition (traditional vocational rehabilitation) in increasing participation in competitive employment among this group of young adults at risk of early work disability. Participants in the IPS group also worked more hours, and more often worked at least 20 hours per week. The findings are in line with previous studies investigating the effectiveness of IPS for patients with SMI on vocational outcomes (122, 225). They also align well with findings from a recent systematic review which showed that tailored SE interventions have a positive impact on competitive employment outcomes among young adults with chronic disabling health conditions (226). In addition to strengthening the evidence-base for IPS in general, the study provides several novel contributions to the literature. Firstly, the results—including the fidelity and process measures—show that the IPS methodology can be successfully repurposed to young adults at risk of early disability due to social or health-related problems that do not necessarily involve mental illness. Secondly, the study investigated a range of non-vocational outcomes and produced interesting findings on some health-related variables. Thirdly, previous systematic reviews have pointed out a need for studies specifically investigating IPS for young adults (69), as well as for interventions to target the more marginalized NEET subgroups in order to investigate what works for whom (55). Each of these points will be discussed in more detail below.

While the IPS methodology was originally developed for patients with SMI, previous studies have shown that IPS is effective across a range of sociodemographic and clinical subgroups within this patient group (80). The overall evidence of the effectiveness of IPS for SMI (see section 1.1.8.2.) opens up for questions about whether the methodology can be applicable for other groups who do not necessarily have mental illness. The current study shows that IPS can be successfully repurposed to young adults at risk of early work disability due to social or health-related problems in Norway, which suggests important implications for the focus of traditional vocational rehabilitation efforts targeting this group. Being the first trial to investigate IPS for this new target group also implies that there is need for future research to see whether the results can be reproduced in other studies, as well as long-term follow-up using register data to see if the results hold up in the years to come. The possibility of repurposing IPS to other non-psychiatric target groups is a new and growing field of research with large potential, and we are currently investigating whether IPS can be successfully repurposed to newly arrived refugees in the city of Bergen (147), as well as patients with chronic pain in Oslo (145). Using the methodology to target new groups does however involve making relevant adaptions to the evidence-based IPS model, which may reduce generalizability (227). Meanwhile, measuring fidelity to the IPS model can determine to what degree interventions adhere to the standardized methodology and can be compared with previous IPS-trials. Although the IPS intervention in the SEED-trial was above the cut-off for IPS, the program scored low compared to fidelity levels attained in previous IPS-trials. Beside the expected poor scores related to integration with mental health services, the program had low scores on providing long-term follow-up, assertive engagement and outreach for clients who missed appointments, agency focus on competitive employment, and the share of time spent on vocational services by IPS specialists. We recommend that future efforts to provide IPS to this population consider these issues, and investigate the possibilities of establishing more structured routines to integrate any relevant health services with the intervention. This is regardless of whether the relevant services are within mental health care or in other sectors of the health care system (e.g. the individual's general practitioner or physiotherapist). Higher fidelity has previously been associated with better employment outcomes (77, 78), which may also be true for the population investigated in the SEED-trial, but this cannot be demonstrated until a high fidelity IPS program is first evaluated.

Previous reviews have described a lack of studies investigating health-related outcomes among NEETs (55), and significant findings on non-vocational outcomes of IPS in previous studies are scarce (see section 1.1.8.2.). The findings suggesting that IPS had beneficial effects on some health-related outcomes in the current study are therefore interesting. When adjusted for baseline and missing observations, participants who received IPS had more favorable results on level of disability, subjective health complaints, drug use, helplessness and hopelessness, and expectations about future well-being, compared to the control group. The findings on subjective health complaints and disability are in line with a recent Norwegian IPS-trial for moderate and severe mental illness (125). The findings on drug use are however unique in the IPS literature, along with the positive effect of IPS on helplessness, hopelessness, and expectations for future well-being which will be discussed in more detail below. Meanwhile, there was a general lack of findings on outcomes related to mental health, with the exception of subscales on anxiety and pseudoneurology (e.g. sleep problems, dizziness, and sadness/depression) which were only significant at 6-month follow-up. This may be partly due to the clinical characteristics of the study sample, who did not necessarily have mental illness and therefore had lower mean symptom severity on these outcomes compared to participants in the previous Norwegian IPS-trial (125). The inconsistency of the results, and the fact that most outcomes did not reach statistical significance prior to adjustment, does however suggest that the findings on secondary health-related outcomes should be interpreted with caution. This methodological issue is further addressed in section 5.3.2. In the meantime, IPS was not associated with detrimental health effects compared to the control group in any of the analyses, which is in line with previous research (128).

The heterogeneity of the NEET population suggests a need for efforts to target specific subgroups (57). Policies such as youth guarantees, guidance, counselling or parental engagement, may be most appropriate for individuals who are closer to work, while overlooking or failing to reach more marginalized groups (45). The SEED-trial addresses an established need of interventions for the most disadvantaged NEET subgroups (55) by targeting a particularly marginalized group of NEETs at risk of early work disability. The finding that IPS can help this group enter the competitive labor market implicates that policymakers should redirect their focus from sheltered approaches to individualized follow-up aimed toward the competitive labor market, in vocational rehabilitation efforts for this important and vulnerable group.

5.2. Theoretical considerations

When looking back to the theoretical framework of the thesis, there appear to be clear lines between the findings discussed above and the relevant theories of coping and motivation.

In light of a recovery perspective, the findings provide support to the notion that functional recovery is a part of the process rather than an end-point which is to be preceded by treatment and training. Many individuals who were considered by their caseworker to be in need of a stepwise and sheltered approach, were able to access the competitive labor market more directly through follow-up with IPS. Participants who received this type of follow-up did not show any detrimental effects on coping or health-related outcomes, although faced with the prospect of pursuing competitive employment directly rather than following their original plan of sheltered traineeships. On the contrary, participants who received IPS showed some beneficial effects in these areas, such as higher optimism about future well-being and lower levels of helplessness and hopelessness than their peers in the control group who followed their prearranged path of vocational rehabilitation. These findings relate directly to the cognitive activation theory of stress (CATS) (27), and show that IPS may promote more positive response outcome expectancies than traditional vocational rehabilitation. The SEED-trial is, to our knowledge, the first study to investigate this relationship, and the findings suggest that coping-related measures may be highly relevant outcomes for future studies. The effect was found when comparing the two groups, but the relatively high employment rate in the IPS group raises the question of whether the effect was merely a consequence of employment, or whether it was due to the type of follow-up received in the process. Based on the CATS, various components of the IPS model are likely to promote the individual's expectations of being able to cope, by communicating that competitive employment is an attainable goal along with exposure to the competitive labor market with close and individualized support. Experiences with actually finding a job and being able to work alongside other members of the competitive labor market will facilitate positive outcome expectancies, that according to the CATS may be generalized across other contexts and situations.

Although within-group changes over time were not tested for significance in paper III, levels of helplessness and hopelessness at both follow-up points increased from baseline levels among the control group while they declined somewhat in the IPS group. While it is possible that IPS promoted positive response outcome expectancies to some extent, this suggests that the traditional sheltered approach may rather have had have a negative impact on participants' expectations of coping, by communicating that there is need for prevocational training and to shelter the individual from competitive work settings. This is illustrated by the various items from the TOMCATS questionnaire, such as "I wish I could change my life, but it's not possible" (helplessness) and "It's better that others try to solve my problems than for me to mess things up and make them worse" (hopelessness). In the meantime, it is uncertain how expectancies among participants in the IPS group who did not attain employment may have been affected. It seems likely that individuals who did not attain employment despite receiving IPS may have developed more helplessness and/or hopelessness than those who were successful. The analyses in paper III do however not provide answers to this, and further investigations comparing those who gained employment vs. those who did not are warranted.

According to the self-determination theory of motivation, interpersonal contexts that support the individuals' needs for autonomy, competence, and relatedness, will have a more beneficial impact on autonomous motivation (165). The IPS principles that base eligibility on client choice rather than evaluations of job readiness, and pay attention to client preferences in the job search process and subsequent follow-up, are likely to facilitate the individual need for autonomy. Having a chance to take part in competitive employment situations with real-life demands for performance, enables the person to experience competence in settings that match the persons' skill level while support can be provided where necessary. Furthermore, being an integrated part of the ordinary labor market instead of being placed in sheltered training settings may also promote feelings of relatedness, as the individual becomes a part of a working community and contributes to society in terms of taxes and work capacity. The three needs can be viewed separately or together as a composite, but the need for autonomy may play an especially important role as employees who have a sense of autonomy may also feel more connected to and effective in the work place (163). While traditional vocational rehabilitation services may also support the basic psychological needs, the limited types of available sheltered work settings cause some clear restrictions to autonomy. Finding a good job match for the individual is an important aspect of IPS that may often require a certain creativity in the job search process, whether it concerns the personal goals of the client and what he or she enjoys, or practical things such as working hours, location, and level of payment. Furthermore, the social context in sheltered businesses is characterized by colleagues who are also participating in work training due to impaired work capability. This limits any possibility of making choices about disclosure of these things, and having the informed choice of whether or not to disclose their illness was considered as one of the most helpful factors by participants receiving IPS in the SEED-trial.

In addition to individual coping and motivation, vocational rehabilitation is ultimately related to all the various environmental systems from the micro to the macro levels (155), which all contribute in shaping its course. These do for example include attitudes toward work among friends, family, and health practitioners, quality of health and social services, labor market characteristics, legislation, and cultural beliefs. While acknowledging these contexts, IPS is primarily an individual approach that may have limited opportunities to change the context itself. Various barriers, such as stigma or employer willingness to include different groups (228-233), may complicate the process of entering the competitive labor market despite support from an IPS specialist. IPS does however focus on the individual's personal preferences and needs for support in the interactions with the various environmental systems. This may involve contact with the individual's employers and health practitioners, and guidance on matters related to the labor market and benefit systems. By using a holistic approach to recovery, the importance of contextual factors can be acknowledged, while the individual is encouraged to be an active agent in his or her own process of recovery.

5.3. Methodological considerations

5.3.1. Design and quality of evidence

The randomized controlled design is a major methodological strength in papers I and III. RCTs are the most rigorous way to determine whether there exist causal relationships between intervention and outcome, and to directly compare the effectiveness of interventions (234, 235). The randomization minimizes *allocation bias*, and reduces confounding due to unequal distribution of both known and unknown factors between the study groups (234).

While biases related to performance and assessment in RCTs can be minimized by blinding participants, data collectors, and data analysts to the group allocation (236), blinding of participants was not feasible in the SEED-trial due to the different nature of the interventions. Participants' knowledge of allocation and potential disappointment by being placed in the control group (which represented treatment as usual for the participants) is therefore a limitation in the study. Meanwhile, the information given to all participants emphasized that both interventions involved close follow-up, and that there was no previous knowledge as to which intervention was superior for the current group and context. Apart from the intervention, the participants received the same follow-up, and outcomes for both groups were standardized. Because the trial coordinator performed the recruitment of participants as well as the collection, handling and analysis of data, adequate blinding was not obtained for this person after allocation. But while blinding after allocation is not always feasible, allocation concealment before and until the interventions are given is always recommended (235). The randomization sequence was therefore created by a statistician who had no contact with the participants, and participants were not randomized until after the information meetings had taken place. The randomization was mainly carried out by staff who were not involved in the study, with a few exceptions where the trial coordinator performed the randomization while pursuing concealment. Also, intervention groups were coded in the data file, and the code was concealed to the researcher responsible for repeating and controlling the data analyses.

5.3.2. Sample size and generalizability

The sample size in papers II and III was lower than the aim described in paper I, which precludes further analyses within subgroups, increases the risk of false negative findings (type II errors), and may reduce the generalizability of results. However, based on the inclusion criteria combined with the long recruitment period, there is reason to believe that the sample is representative of young adults at risk of early work disability in Norway, despite the small sample size. The group of young adults aged 18-29 with work disability is relatively small compared to older age groups, and there is no reason to believe that there are systematic reasons for not being invited or declining participation in the study. This will be discussed in more detail below.

Challenges in recruitment

In spite of the broad invitation which included everyone in the target group attending nine local labor and welfare offices in one of the largest counties in Norway, difficulties in obtaining a sufficient number of participants led to an extension of the recruitment period, which lasted for a total of two years and seven months. Of those who attended the information meetings, 41% did not wish to participate or were ineligible for participation in the study (see figure 1 in paper II). The majority of declinations were due to individuals already having established plans for traditional vocational rehabilitation with their case worker, in some cases to the point where they had already visited the businesses they were planning to attend. To avoid this, the recruitment strategy was later decentralized from taking place at the central labor and welfare office to involve information meetings at the local offices involved in the project. Meetings with staff at the local offices were first held to inform managers and case workers about the trial, and case workers were instructed to refer eligible participants to the trial coordinator who would arrange local information meetings on an as-needed basis. Meanwhile, this led to problems with lack of referrals from caseworkers to the information meetings, and cases where potential participants went straight to traditional vocational rehabilitation without being offered to participate in the trial. During the recruitment period, there has also been an increasing knowledge of place-and-train approaches due to a large concurrent study of IPS for people with mental illness (125), and a general trend in the Norwegian Labor and Welfare Administration toward avoiding the use of sheltered approaches for young adults when possible. While this is likely to have affected the number of available participants fulfilling the inclusion criteria (i.e. being considered eligible for sheltered training by the individual caseworker), it may also have led to an increased share of more severely challenged, and thereby particularly relevant, individuals in the sample.

Expressed desire to work

The principle of zero inclusion in IPS states that individuals should not be screened on job readiness or other factors, only on the desire to work. Having an expressed desire to work is an inclusion criteria in most IPS studies (68), and participants in the SEED-trial were asked whether they were interested in *services aimed at helping them obtain work*. This is a less strict application of the inclusion criteria than what was described in the study protocol, and it is possible that some of the participants were not interested in entering competitive employment directly. This may have led to a less motivated sample than what would have been achieved by enforcing a more precise inclusion criteria of expressed interest in competitive work. This can be considered both as a limitation and as a strength in this thesis: In paper II, it may have increased representability for young adults at risk of early work disability; yet in paper III it might have led to lower employment rates, as previously observed in an IPS trial by Lehman et al. (105), which did not use expressed interest in employment as an inclusion criteria.

Exclusion and declined participation

Possible *bias in participation* leading e.g. more vulnerable individuals to decline are generally important to bear in mind when interpreting results of all trials where participation is voluntary (237). It is possible that those who declined due to having already established plans for traditional vocational rehabilitation or preferring sheltered employment, may represent a more vulnerable group. Meanwhile, several individuals also declined participation due to ongoing or established plans for employment or education, indicating that the opposite might be true in other cases.

Response rate and missing data

While baseline data was complete for all participants, the reduced response rate at follow-up represents a risk for *attrition bia*s (238). Efforts to increase the response rate included contacting non-respondents to remind them of the questionnaires, and all participants who were reached by phone were also asked verbally about the primary outcome. In cases where telephone contact could not be obtained, log-books from the IPS specialists were used to provide information on this specific outcome for participants in the IPS group (n=7). Since we did not have the possibility to retrieve the equivalent information from the various service providers in the control group, this is a possible source of bias. The difference in response rate between the groups on the primary outcome was however not significant.

Following these efforts, the response rate on the primary outcome at 12 months was increased to 86%, but response rates to questionnaires including secondary outcomes at 6 and 12-month follow-up were 72% and 64%, respectively. Furthermore, due to problems in the data collection, measures of weeks from enrollment to first job and weeks worked at longest-held job were insufficient to report, which represents a limitation to the study.

Several comparisons to investigate systematic differences in missing responses were analyzed, including differences in response rates between the two study groups, baseline characteristics between respondents and non-respondents, and baseline characteristics between the reduced samples of respondents to follow-up in each study group. Some differences were found (paper III), showing that data was not missing completely at random (MCAR).

Ignoring missing data involves assuming that data are MCAR, and is problematic as it may lead to biased, unreliable, and underpowered parameter estimates (239). Although robust methods for handling missing data have been developed, the application and reporting of these methods has been insufficient in RCTs on patient-reported outcomes, and inappropriate methods for missing data are a concern (240). Recommended approaches include multiple imputation (MI) and maximum likelihood estimation (MLE) (241). In order to handle missing data on secondary outcomes in the current trial, analyses were adjusted for missing data in mixed effect regression models using MLE. Unlike MI, MLE does not impute data, but instead uses the available values of each case to compute maximum likelihood estimates (242, 243). MLE therefore always produces the same result for the same set of data because it does not involve random draws (244). The approach accounts for complex structures of missing data (206), but assumes that missing values would conform to patterns in the nonmissing values (242). Baseline differences between the groups or differences in attrition will therefore not affect the results, as long as intra class correlation is consistent within each group. This implies that MLE in mixed effect regression models can produce biased results if there are differences in the effect of those who become non-respondents compared to respondents in the two groups. For example, if IPS participants did not respond because they had a beneficial effect, while participants in the control group did not respond because they had an unfavorable effect, this would have led to bias. On the other hand, this would also be true for unadjusted analyses, and the results from the unadjusted analyses also stand the risk of bias due to ignoring missing observations, and increased risk of type-II error caused by lack of power.

In the current study, it was decided to report findings from both unadjusted and adjusted analyzes, in order to aid the interpretation of results and increase transparency.

5.3.3. Questionnaires

The questionnaires in the SEED-trial included vocational outcomes used in previous literature on IPS in order to ensure comparability to previous studies, in addition to background and social variables, and various standardized measures of physical and mental health and well-being. While the combination of a wide range of vocational and non-vocational outcomes represents a strength, many outcomes of interest are also lacking, such as more precise information on education, family factors such as parent's education or unemployment, and childhood factors including contact with child protective system. The design of the questionnaire package did however need to take the amount of time needed to complete it and the potential burden on respondents into account. A few questionnaires, including the Health-related quality of life and visual analogue scale (EQ-5D) were excluded from the questionnaire to reduce its length. The questionnaire for the SEED-trial was developed in parallel with the questionnaire for a multicenter trial of IPS in patients with moderate to severe mental illness, and involved collaboration with a user representative who provided input on the length, design and formulation of the questionnaire. One of the changes made as a direct consequence of her input were the insertion of a pause in the middle of the questionnaire suggesting that the respondent could take a short break to e.g. go to the restroom, have a cup of coffee, or gather his or her thoughts, before continuing. Nevertheless, there is reason to believe that the length of the questionnaire might have affected the response rate, as our online survey metadata showed that the follow-up questionnaires in some cases took well over an hour to complete.

5.3.4. The use of self-reported measures

Results in paper II and III are based on data provided through self-report, and thereby subject to the potential pitfalls of *self-reporting bias* related to e.g. social desirability and recalling past events (245). Self-reported data may however be the best measurement method available for outcomes that are not necessarily externally observable, providing information directly from the participant without interpretation by others (246, 247). This is especially relevant for the social- and health-related outcomes in papers II and III. Meanwhile, the primary outcome in paper III (competitive employment) may be biased if participants e.g. do not recognize the difference between competitive and non-competitive work settings. It is also uncertain whether reports of employment concern short spells of work or types of work that are not subject to reporting to employment registries (minor jobs below the threshold of 1000 NOK, or freelance and self-employment). This will be followed up with objective registry data from the Norwegian Labor and Welfare Administration, which will provide a more conservative, yet objective and complete measure of employment for all participants. There is reason to believe that results from registry data will show somewhat lower employment rates than those found using self-report, as was found in the previous trial of patients with mental illness in Norway (125). The register data will be collected for up to five years after enrollment in the SEED-trial, and will be reported in a subsequent paper.

5.3.5. Comparison group – are we comparing apples to oranges?

The two conditions compared in the thesis represent contrasting approaches within vocational rehabilitation, as IPS is a classic place-then-train approach while traditional vocational rehabilitation in sheltered businesses is a correspondingly traditional train-then-place approach. The substantial difference between the approaches and their focus on competitive work may be criticized for comparing two incomparable interventions with a biased primary outcome measure. On the other hand, both interventions are vocational rehabilitation services stating that their goal is to find work; both are offered to people with severe disabilities; and all participants in the trial were considered by their caseworker to be eligible and intended for traditional vocational rehabilitation in sheltered businesses. The latter indicates that there was a perceived need for sheltering and that participants were not considered ready to pursue competitive employment directly—at least not yet. The results presented in paper III showed that this was not the case for many, who were able to attain competitive work through IPS. The criticism of unfair comparison can in principle be raised toward any trial using treatment as usual as a control condition to a new and promising intervention, but was considered ethically acceptable as IPS has not been tested for this group before, and since the control condition is an active rather than a passive control condition.

5.3.6. Visibility, transparency, and reproducibility

The SEED-trial was registered in an international trial register and the study protocol was published in a peer-reviewed journal. Publishing detailed accounts of the study design, methodology and procedures in open access before the recruitment process is finalized and prior to analysis, is a methodological strength that has several advantages. Providing information about ongoing research may reduce the risk of duplication of research effort, and improves the reproducibility of findings. It is also important in reducing the risk of *publication bias* (withholding negative results from publication), or *outcome reporting bias* (selecting which outcomes to report based on their results), the impact of which is believed to be under-recognized, and to represent a substantial problem that may lead to significant overestimation of treatment effects and affect the conclusions in meta-analyses of the research literature (248, 249).

5.4. Implications and directions for future research

Young adults who stand outside the labor market are an important challenge in Europe, and it has previously been pointed out that there is little knowledge about what may help to reengage this group. There is an established need of high-quality evidence of what works for different subgroups of NEETs, and this is especially true for the most marginalized groups, as current approaches may not be designed to cater to the more disadvantaged individuals (45). In the meantime, there has also been a growing interest in the literature regarding the possibility of expanding the IPS methodology to new target populations (94, 95), such as youth with more common diagnoses (69). The papers in this thesis aimed to provide some pieces to the puzzle by targeting young adults at risk of early work disability with various social and health-related problems, and investigating the effect of repurposing IPS to this group. The findings underline the need for attention to psychosocial factors, and also show that providing close and individualized support aimed toward competitive employment settings is a more viable way to achieve employment than a traditional train-then-place approach. IPS may have the potential to forestall early entry into the disability system, which implies that policymakers should consider making IPS services available for this group. IPS services have previously been shown to be effective across geographic areas and local unemployment rates (122). In addition to concern Norwegian policy and practice, this new information also has implications for a problem that is relevant across other countries in their work to integrate young adults into the competitive labor market.

Meanwhile, this is the first study investigating IPS for young adults at risk of early work disability, and there is need for further research to replicate these results, preferably with larger sample sizes, before stronger conclusions can be drawn. It is also uncertain whether the positive effects of IPS will hold up in the long term, and when using objective register data, which will be investigated in a future follow-up paper. The register data will also provide information about how many of the participants went on to receive permanent disability benefits, and whether IPS was successful in preventing early disability among participants in the SEED-trial.

The results showed that very few participants in traditional vocational rehabilitation obtained any competitive employment during follow-up. While this implies that the approach was ineffective in increasing labor market participation, it may also be due to a "lock-in effect" where the focus on work training leaves participants with less time for job search activity during participation. The long-term follow-up with register data will provide more information about to what degree these participants will be able to find a job in the subsequent years following the intervention.

Experiences from the fidelity measurements illustrate that there are several challenges that should be addressed in future efforts to implement IPS for such non-psychiatric populations. These for example include establishing better routines for the integration of relevant health services in the intervention, and reaching out to clients who miss appointments and who are difficult to obtain contact with. The latter may be more challenging without the interdisciplinary collaboration with stakeholders involved in the health treatment of the individual, and represent an example of challenges that may arise when expanding IPS to new populations. The finding that IPS was successfully applied to a new target group in the SEED-trial does however suggest that efforts to expand the scope of IPS services to new populations hold much promise, and have the potential to aid people with various challenges on their way to becoming an included member of the working society.

6. CONCLUSIONS

All in all, this thesis shows that:

- Individual Placement and Support (IPS) can be successfully repurposed to young adults who are at risk of early work disability due to various social and health-related problems in Norway.
- This group is characterized by high levels of psychological distress, alcohol use, and psychosocial problems related to bullying and violence. Those who have an illness mainly believe it to be caused by relational problems such as loneliness, isolation and lack of adequate care.
- IPS was superior to traditional vocational rehabilitation in helping this group attain competitive employment. Findings also indicated that IPS may have more beneficial effects than traditional vocational rehabilitation on health-related outcomes such as level of disability, subjective health complaints, drug use, and coping-related measures.

These findings have the following implications:

- There is need for a broader focus on non-medical and psychosocial aspects in vocational rehabilitation for young adults at risk of work disability.
- The focus of vocational rehabilitation for this group should be redirected from traditional sheltered work training to IPS providing individualized support in the competitive labor market.
- There is need for future research to investigate whether the results can be replicated and to evaluate long-term effects. The results also encourage investigations of whether IPS can be repurposed to further patient groups at risk of permanent exclusion from the labor market.

Er-at maðr alls vesall,
þótt hann sé illa heill;
sumr er af sonum sæll,
sumr af frændum,
sumr af fé ærnu,
sumr af verkum vel.

Haltr ríðr hrossi,
hjörð rekr handar vanr,
daufr vegr ok dugir,
blindr er betri
en brenndr séi,
nýtr manngi nás.

A man is not bereaved of all,
although he is ill of health;
some are blessed with sons,
some with friends,
some with wealth,
some in working well.

The halt rides on horseback,
the one-handed drives a herd,
the deaf fights and is useful,
to be blind is better
than to be burnt on the pyre,
there is nothing the dead can do.

Hávamál, Poetic Edda (stanzas 69 and 71)

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Protocol for the SEED-trial: Supported Employment and preventing Early Disability

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Abstract

Background: Early withdrawal or exclusion from the labor market leads to significant personal and societal costs. In Norway, the increasing numbers of young adults receiving disability pension is a growing problem. While a large body of research demonstrates positive effects of Supported Employment (SE) in patients with severe mental illness, no studies have yet investigated the effectiveness of SE in young adults with a range of social and health conditions who are receiving benefits.

Methods/design: The SEED-trial is a randomized controlled trial (RCT) comparing traditional vocational rehabilitation (TVR) to SE in 124 unemployed individuals between the ages of 18-29 who are receiving benefits due to various social- or health-related problems. The primary outcome is labor market participation during the first year after enrollment. Secondary outcomes include physical and mental health, health behaviors, and well-being, collected at baseline, 6, and 12 months. A cost-benefit analysis will also be conducted.

Discussion: The SEED-trial is the first RCT to compare SE to TVR in this important and vulnerable group, at risk of being excluded from working life at an early age.

Trial registration: Clinicaltrials.gov, registration number NCT02375074. Registered on December 3rd 2014

Keywords: Disability, Employment, Individual Placement and Support, Randomized Controlled Trial, Supported Employment, Vocational Rehabilitation, Unemployment, Work Disability, Youth

Background

Early disability

The number of young adults receiving permanent disability pension in Norway has recently accelerated. While the overall percentage of disability pensioners in the population has remained steady for the last decade, there has been an increase in the proportion of young disability pensioners (between 18 and 29 years old) and a continuous decline in older disability pensioners throughout the same period [1, 2]. From 2006 to 2015 there was an increase of 77 % in young disability pensioners [3] while the population in the same age group increased by 23 % [4], making the development evident even when population growth is accounted for. Additionally, during the same period, an increased rate of labor immigration (mainly young males) has inflated the number of working young adults, which may have suppressed the percentage growth and led to an underestimation of the development [1].

Musculoskeletal and common mental disorders account for about 2/3 of sickness benefits and disability pensions issued in Norway [5, 6], but within the subgroup of disability pensioners aged 18–29, 59 % are receiving disability pensions due to mental illness and behavior disorders alone [7]. This type of early withdrawal or exclusion from the labor market leads to vast personal and societal costs, especially when seen in context with the aging of the Norwegian population causing a disparity between the supply of available workforce and the need of work capacity [8]. Furthermore, the importance of work for health and well-being is well-documented [4–6], and evidence shows that unemployment is not only caused by mental health problems, but also causes them [7, 8].

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Long-term sickness absence is a risk factor for unemployment and permanent disability that goes beyond the effect of health status, suggesting that long-lasting absence may itself initiate a process of marginalization from the labor market [9]. Few recipients of long-term sickness benefits return to working life, seemingly due to mechanisms other than age, diagnosis, gender and public health [10]. This may be particularly relevant for young people in need of special assistance to obtain work, who are at risk of being excluded from working life before having had the chance to establish themselves on the labor market. Previous studies document that a small percentage of the population accounts for the majority of sickness absence, and that broad interventions targeting the workforce as a whole may not reach these small but high-risk groups [11]. Focusing on the group of young people who are receiving temporary benefits, but have not reached the point of more permanent disability pensions, thus appears to be a viable way to move forward.

Perspectives in vocational rehabilitation

Vocational rehabilitation has traditionally been characterized by a *train-then-place principle*, involving prevocational training in sheltered environments before attempting to enter the open labor market [12]. In the train-then-place approach, clients try different forms of work adapted to their skills and challenges, while undergoing a stepwise process of targeted training to prepare them for competitive employment. Training is usually provided in group settings along with other workers with challenges or disabilities, and with close follow-up from an advisor. While the goal is to improve clients' opportunities for obtaining work, the approach has been criticized for promoting dependency and demoralization [13], and for having a negative effect on different stakeholders expectations of the clients' work ability and productivity [14].

In the 1980s, rehabilitation leaders in the U.S. introduced an approach based on the *place-then-train principle*, with a main goal of competitive employment and immediate work integration, without prevocational training [12]. This approach challenged common assumptions about people with serious disabilities being able to work only in workshops or other sheltered environments. Approaches within this perspective are known as Supported Employment (SE), and the evidence-based and manualized methodology of SE is called Individual Placement and Support (IPS). The model was originally developed for people with severe mental illness (SMI), and is supported by evidence from randomized controlled trials (RCT's) in the US [15–24] as well as internationally [25–37], showing SE to be effective in this disability group on a range of vocational outcome measures. IPS involves individual support from a trained job specialist, incorporating eight evidence-based principles: focus on competitive employment in ordinary paid positions; rapid job search, starting the job search on average within one month after program entry; attention to the client's choices and preferences; integrating work with mental health treatment; personalized benefits counseling; systematic job development; individualized long-term job support; and eligibility based on the client's choice [38]. The latter involves a zero exclusion criteria, which states that everyone who has an expressed desire to work should have access to IPS services regardless of factors such as previous employment history, history of violent behavior, personal presentation, or substance abuse, and that the service does not screen for work readiness [39].

Evidence-based knowledge of the effectiveness of the services being offered through public agencies is of vital importance in future planning of vocational rehabilitation of young adults. Although there is a large and growing body of research demonstrating the effectiveness of the IPS approach in other populations, no studies have yet examined the effectiveness of IPS specifically for young adults at risk of becoming permanent disability pensioners.

Methods/Design

The study is conducted by Uni Research Health, in collaboration with the Norwegian Labor and Welfare Administration (NAV).

Aims and objectives

The aim of the project Supported Employment and preventing Early Disability (SEED-trial) is to compare two interventions to increase labor market participation in young people at risk of early work disability: Traditional Vocational Rehabilitation (TVR) versus Supported Employment (SE).

Background measures

Each participant will be asked to complete questionnaires including background information on demographics and employment history.

Outcome measures

Primary outcome: competitive employment

The primary outcome of the SEED-trial is *competitive employment at any time during the 12 months after enrollment in the study*. Competitive employment is here defined as working in a job on the competitive labor market, at usual wages, with regular supervision.

Additionally, success in employment will be defined using a range of standardized indicators of employment outcomes used in IPS studies [40], including rate of job acquisition, amount and duration of work, total wages, and number of days from enrollment in the study to employment. Information about receipt of social security benefits (sickness and disability benefits, unemployment, work assessment allowance), income, financial assistance, and educational activity (started or completed education), will also be collected.

We will use three sources of information for competitive employment: Survey data for hours worked and success in employment; register data from the NAV for receipt of social security benefits and income; and register data from Statistics Norway (SSB) for financial assistance and educational activity.

Secondary outcomes: self-reported health and well-being

Questionnaires distributed to all participants will further measure a range of secondary and non-vocational outcomes related to health and well-being, including interventions and treatment received for the last 6 months, experiences with bullying and violence, sleep problems, and the following variables:

- *Alcohol and drug abuse* will be measured using the 3-item Alcohol Use Disorders Identification Test (AUDIT-C) [41] screening for problem drinking, and the 11-item Drug Use Disorders Identification Test (DUDIT) [42] screening for drug-related problems and drug dependence.
- *Coping* will be measured using the 7-item Theoretically Originated Measure of the Cognitive Activation Theory of Stress (TOMCATS) [43], consisting of 3 subscales: coping (1 item), helplessness (3 items), and hopelessness (3 items).
- *Disability* will be measured using the 12-item version of the WHO Disability Assessment Schedule 2.0 (WHODAS 2.0), measuring functioning in 6 domains of life: cognition (2 items), mobility (2 items), self-care (2 items), getting along (2 items), life activities (2 items), and participation (2 items) [44].
- *Fatigue* will be measured using the 11-item Chalder Fatigue Questionnaire (CFQ) consisting of 2 subscales: physical fatigue (7 items) and mental fatigue (4 items) [45].
- *Illness perceptions* will be measured using the 9-item Brief Illness Perception Questionnaire (B-IPQ) [46], measuring 9 dimensions of illness perceptions: consequences (1 item), timeline (1 item), personal control (1 item), treatment control (1 item), identity (1 item), coherence (1 item), emotional representation (1 item), and concern (1 item), in addition to an open-ended item concerning causal factors (1 item).
- *Mental health* will be measured using the 25-item Hopkins Symptom Checklist (HSCL-25) [47], consisting of 2 subscales: anxiety symptoms (10 items) and depression symptoms (15 items).
- *Social support* will be measured using a revised 11-item version of the Social Support Inventory [48, 49] using 2 subscales as suggested by Øyeflaten et al. [50]: directive social support (4 items) and nondirective social support (7 items).
- *Subjective health complaints* will be measured using the 29-item Subjective Health Complaints Inventory (SHC), consisting of 5 subscales: musculoskeletal pain (8 items), pseudoneurology (7 items), gastrointestinal problems (7 items), allergy (5 items), and flu (2 items) [51].
- *Quality of life* will be measured using the 5-item EuroQol questionnaire (EQ-5D) including a visual analogue scale (EQ-VAS) [52].

Participants and randomization

Inclusion and exclusion

Eligible participants will consist of unemployed individuals aged < 30 years old, who are receiving temporary benefits due to various social- or health-related problems. Attending employment services overseen by the NAV is a requirement for recipients of these benefits, and we will invite all those who are intended for the specific traditional employment service called "traineeship in a sheltered business". The only additional exclusion criteria are that participants must have an expressed desire to work and sufficient language skills to answer questionnaires in Norwegian.

Recruitment and randomization

Nine local NAV-offices throughout the Hordaland County are involved in the project. Caseworkers at each office will refer all eligible participants to general information meetings organized by researchers at Uni Research Health in collaboration with NAV. The meetings include detailed information about the project and invitation to participate in the study. Interested individuals will be asked to read and give informed consent, and researchers will record their personal information (name, contact details, and national identification number) and provide each participant with an ID-number on the spot. ID-numbers will be randomized at Uni Research Health after the meetings, using premade computer-generated lists with a 1:1 randomization ratio. Information about randomization outcome will be communicated by e-mail or telephone to the relevant caseworker at NAV, who contacts their client and the relevant vocational rehabilitation organization.

Data collection and data management

Survey data will be collected at baseline, 6 and 12 months. Baseline questionnaires will be administered at the information meetings, and participants complete their information electronically on iPads with secure software (Qualtrics®), or in paper format if preferred. Follow-up questionnaires will be administered electronically to participants providing their e-mail address at baseline, or in paper format via regular mail.

Data collected using iPads will automatically be electronically transferred to and stored in a secure online database. Data collected in paper form will be entered manually by the data manager at Uni Research Health and sent to the same database, after which the original questionnaires will be stored in a locked filing cabinet.

Register data will be collected retrospectively for 3 years before baseline, and for a 5-year period after enrollment date. The information will be de-identified and merged with survey data, while the identifier is secured in a locked and fireproof safe.

Study design

The SEED-trial is designed as a randomized controlled trial (RCT), and participants are randomly assigned to 1 of 2 interventions (Fig. 1).

Interventions

Both interventions in this trial are offered by VR organizations overseen by the NAV, and are part of the various employment schemes offered to people on temporary benefits in Norway. Participants continue to receive temporary benefits while attending the services, which are normally offered for up to two or three years, depending on the specific intervention and individual needs.

Traditional Vocational Rehabilitation (TVR) The first group will be referred to a TVR organization, where they will receive a traineeship in a sheltered business with follow-up from trained advisors and department supervisors.

This intervention is *service as usual* for the study participants, and is currently offered to clients who are considered by their caseworker to have need for special assistance to obtain work. The specific approach falls within the *train-then-place principle*, and participants receive preparatory work training in a sheltered environment before pursuing employment. The goal of the intervention is to improve the participant's work skills and opportunities for entering the labor market, and includes follow-up geared towards finding a job. The traineeships are offered by various sheltered businesses in the area with a range of departments including canteens and catering, car repair, day-care services, upholstery and interior decoration, transport, laundry services, welding, and warehouse handling. The distribution of participants to the various departments will follow usual practice, and is conducted at NAV based on the individual caseworker's description of the client's interests and goals, as well as availability and waiting-lists.

Supported Employment (SE) The second group will be referred to the vocational rehabilitation organization Fretex Vest-Norge, where they will receive SE by trained job specialists following the evidence-based principles of IPS SE.

The intervention is based on the *place-then-train principle*, aiming to help people with health problems or other challenges participate in the competitive labor market, without the use of prevocational training, stepwise and sheltered approaches, or make-work jobs. It aims to find a good job match for the individual followed by on-the-job support after employment, and is based on a belief that anyone who wants to work can hold a job in the normal labor market as long as it is the right job and work environment for that individual.

Adaptions to the IPS SE model

As the manualized intervention of IPS SE was originally developed for patients with SMI, job specialists will need to make some adjustments to the services offered based on the individual participant's challenges. One necessary adjustment concerns the principle of integrating employment services with mental health treatment, as that will not be applicable for participants that do not suffer from mental illness. In cases where participants are receiving

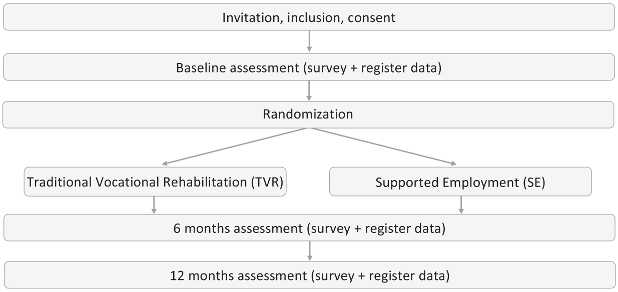

Fig. 1 Study design

treatment for other health problems, job specialists will establish contact with their respective health practitioners instead.

The implementation will be led by an experienced IPS trainer, who will also be in charge of the fidelity reviews, using the IPS fidelity scale [53], which is a standardized and validated scale for measuring adherence to the IPS model [54]. Fidelity reviews will be conducted using document review, calendar review, observations, and interviews of the different stakeholders, in order to determine to what degree the SE intervention fulfills the criteria for IPS SE. These evaluations will be used for quality improvement of services throughout the study period, aiming to adhere to the manualized and evidence-based treatment in spite of the necessary adaptions.

Sample size calculation

Our estimates of sample size are based on international input-data from previous IPS-studies where a mean competitive employment rate of 61 % has been found for IPS and 23 % for controls [55]. If we use 61 and 23 % as possible employment rates, we will need 31 participants in each group in order to obtain a statistical significant difference (with a 5 % significance level and power of 90 %). In order to enable stratified analyses to investigate treatment effects for sub-groups (e.g. for gender), we aim at including a total of 124 participants. The inclusion period will last for up to 2 years and close when the targeted number of participants has been reached.

Statistical analyses

Assessment of treatment effects will be analyzed using standard statistical methods, including t-tests for continuous data and chi-square tests for categorical data. Logistic regression will be performed to study potential moderators of treatment effects. For repeated measures over time (e.g. for sick leave), the statistical analyses may be extended to generalized estimation equations (GEE), to account for correlated data. All analyses will follow the intention to treat principle.

Cost-benefit analysis

Economic returns will be calculated based on treatment effects obtained from the statistical analyses, and will be evaluated using a standard cost benefit formula [56–58], as used by Hagen et al. [59].

Benefit will be measured in terms of increases in the net present value of production, as indicated by an increase in labor market participation. This is calculated as the product of the treatment effect, i.e. the increase in labor market participation and the productivity gains for the society when a person is employed as opposed to receiving social security benefits. Cost of the intervention is measured by treatment cost and costs related to follow-up outside the intervention in the different treatment groups. Health care utilization will be measured using survey data from the participants providing information about health and use of health services.

Discussion

The SEED-trial will provide new knowledge about the effect of TVR versus SE in increasing labor market participation among young unemployed with various social- and health related problems. It will be the first RCT to look at SE for this important and vulnerable group at risk of being excluded from the labor market even before they have had the chance to establish themselves on the labor market.

Abbreviations

APS, traineeship in a sheltered business; IPS, individual placement and support; NAV, Norwegian labor and welfare administration; RCN, Research Council of Norway; RCT, randomized controlled trial; REC, Norwegian Regional Committees for Medical and Health Research Ethics; SE, Supported Employment; SSB, Statistics Norway; TMG, trial management group; TSC, trial steering committee; TVR, Traditional Vocational Rehabilitation

Acknowledgements

The Trial Steering Committee (TSC) is the scientific advisory board responsible for the general overview of the project and its progress. *The Trial Management Group (TMG)* is the project group responsible for the daily management and coordination of the trial. It involves researchers and other people of resource associated with the project.

The TSC consists of:
- Ph.D. Silje Endresen Reme (principal investigator)
- Ph.D. Torill H. Tveito (co-principal investigator)
- Professor Hege Eriksen (Uni Research Health)
- Associate professor Astrid Grasdal (responsible for the cost/benefit analysis)
- Professor Gary Bond (international collaborator from the Dartmouth Psychiatric Research Center, advisor and consultant on IPS implementation and methodological expertise)
- Ph.D. Cécile Boot (international collaborator from the EMGO Institute for Health and Care Research at the University of Amsterdam, advisor and consultant on effect-evaluation)
- Professor Patric Loisel (international collaborator from the Dalla Lana School of Public Health, University of Toronto, advisor and consultant on feasibility and implementation)

The TMG consists of:
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PsyD Ingrid B. Olsen
MD Line R. Solberg
BSc Thomas Knutzen
- Administrative personnel:
Nina Konglevoll (data manager)
Mariann Apelseth (accountant)

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Availability of data and materials
Data from the trial will not be shared, seeing as the study participants have not agreed to sharing of any data or materials upon enrollment and collection. The study also involves data from Norwegian national registries that the authors are not allowed to share by law.

Authors' contributions
SER and VS developed the initial protocol and applied for funding. All authors contributed in the planning of the project, and in preparing, reading and approving the final manuscript.

Competing interests
The authors declare that they have no competing interests.

Consent for publication
Not applicable

Ethical approval and consent to participate
The Norwegian Regional Committees for Medical and Health Research Ethics (REC) concluded that the SEED-trial did not fall under the Health Research Act and therefore did not require ethics approval. The project was approved by the Norwegian Social Science Data Services (project number: 38271), and is registered in the international trial register ClinicalTrials.gov (NCT02375074). The trial adheres to the ethical principles of the Helsinki declaration. Prior to inclusion, all participants receive oral as well as written information about the trial, the randomization process, personal confidentiality, and the right to withdraw from the project at any time, and sign declarations of informed consent and voluntary participation.

Endnotes
Not applicable

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RESEARCH ARTICLE Open Access

Young adults at risk of early work disability: who are they?

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Abstract

Background: Young adults that are not in education, training or employment represent a problem across European countries. While some are cases of temporary transitions or short-term inactivity, others represent a more vulnerable group at risk of early work disability. Early exclusion from the labor market represents long lives exposed to detrimental effects of unemployment on health and well-being, and constitutes an economic burden for society. There is need for more knowledge about young adults who are at risk of early work disability but have not yet reached the point of more permanent exclusion. This study aims to investigate social and health-related problems in a Norwegian sample of young adults at risk of early work disability, and their self-perceived causes of illness.

Methods: Baseline data from participants in the SEED-trial ($N = 96$), a randomized controlled trial comparing individual placement and support to traditional vocational rehabilitation in young adults at risk of early work disability, were analyzed. Background, health behaviors, adverse social experiences, disability level, physical and mental health, social support, coping, and self-perceived causal attributions of illness were measured. Gender differences were analyzed using chi-square and t-tests.

Results: Mean age was 24, and 68% were men. One third reported reading and writing difficulties, and 40% had less than high-school education. The majority had experienced bullying (66%) or violence (39%), and 53% reported hazardous alcohol use. Psychological distress was the most prevalent health problem (52%), and women generally had more physical and mental health problems than men. Self-perceived causal attributions of illness were mainly related to relational problems, followed by health behaviors, heredity/genetics, and external environmental factors.

Conclusions: The study provides a deeper insight into a vulnerable group with substantial challenges related to adverse social experiences, psychological distress, and alcohol use, who emphasized relational problems as the main causal factor for their illness. Findings suggest a need for broader focus on psychological and social factors in vocational rehabilitation efforts targeting young adults at risk of early work disability. Furthermore, gender-specific approaches may be warranted and should be followed up in future studies.

Trial registration: Clinicaltrials.gov: NCT02375074. Retrospectively registered December 3rd 2014.

Keywords: Young adults, NEET, Mental health, Bullying, Vocational rehabilitation, Disability, Unemployment

Background

Young people who are not in employment, education, or training (NEET) represent a problem across Europe [1], causing worries about the potentially detrimental effects of unemployment on health and well-being [2, 3], as well as the economic burden for the society [4]. It has been estimated that 14.2% of young adults aged 15–29 in Europe were NEET in 2016 [5]. NEETs are a heterogeneous population, and while some are in between activities or short-term unemployed, others represent a more vulnerable group of individuals who have given up efforts in education and employment or remain unemployed for prolonged periods of time. The main risk factors for NEET status include poor self-perceived health, but non-medical factors such as low educational attainment and immigrant status have an even stronger impact [4]. Family background factors such as having parents who have little education or have experienced unemployment, further increase the likelihood of becoming NEET [4].

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Uncertain or misaligned employment aspirations are also associated with future NEET status, especially among young men with low socioeconomic status, leading to broken transition phases for youth in a changing and increasingly individualized labor market [6]. Being outside education or employment can have significant ramifications on later participation and attachment to working life, and NEET status in early adulthood is associated with a clear and long-lasting risk of future social exclusion, including work disability [7].

The Nordic countries are generally characterized by low unemployment rates [8], and are among the countries with the fewest young adults having NEET status. While Norway has a relatively low NEET proportion of 7%, approximately half of Norwegian NEETs receive health-related benefits, and one in five remain in the same situation 5 years later [9]. The number of young adults aged 18–29 receiving permanent disability benefits in Norway has more than doubled during the last 10 years [10], while the population in the same age group has increased by 20% [11]. Risk factors for permanent disability benefits among young adults in Norway are similar to those of NEET status, and mainly concern socioeconomic factors such as lower education or income, poor social and family relations, and a weak connection to working life [12, 13]. Qualitative research on young disability recipients in Norway has furthermore underlined the importance of non-medical factors involving difficult childhoods, adjustment problems, and adverse social experiences related to abuse and bullying [14], although this remains to be investigated in larger follow-up studies.

Mental and behavioral disorders are among the leading causes for years lost to disability among youth in high-income countries [15], and are also the major reasons for early work disability in Norway, constituting the main diagnosis in 63% of cases [16]. Data from Norwegian registries show that while the increase in work disability among those aged 18–19 is mainly due to various intellectual and congenital disorders, the increase among those aged 20–29 is mainly due to other mental illness, including schizophrenia, pervasive developmental disorders, behavioral and personality disorders, followed by affective and anxiety disorders [17]. The gender distribution among young disabled contrasts with that of disability beneficiaries in the remaining population, with the majority (56%) being young men.

The Norwegian Labor and Welfare Administration provides work assessment allowance (WAA) for individuals with impaired working capacity who are unemployed or have exceeded the maximum duration of 1 year on sickness leave [18]. WAA is a temporary benefit that can be received for a maximum of 4 years, and if the earning capacity remains impaired, the next step may be to apply for permanent disability benefits. While receiving WAA, the individual is required to keep up to an activity plan involving ongoing treatment or participation in various employment schemes, while his or her work ability is being assessed. While employment schemes that focus on ordinary employment have gained international popularity [19], *traineeships in sheltered businesses* is a Norwegian employment scheme that is only used in cases of particularly uncertain professional abilities and impaired work capacity, that requires close and broad supervision and assistance [20]. While the impaired work capacity may be primarily caused by illness, it may in other cases be primarily due to social problems [21]. Young adults who are receiving temporary benefits and considered eligible for participation in sheltered traineeships represent a specifically challenged group of NEETs, at risk of early work disability and exclusion from working life at an early age.

Early exclusion from working life is subject to considerable societal interest and attention in Norway as well as other European countries, but there is little knowledge about the individuals who are at high risk but have not yet reached the more permanent point of disability benefits. There is need for further investigation to provide insight into who this group is in terms of social and health-related problems, and what they believe may have caused their illness.

Aim

The aim of the study was to investigate the prevalence and level of various social and health-related problems and health behaviors in young adults at risk of early work disability in Norway, and to analyze possible gender differences. A secondary aim was to investigate to which factors participants who perceive themselves to have an illness attribute the cause of their illness.

Methods

Data and design

This study is based on baseline survey data on social and health-related variables from the randomized controlled trial “Supported Employment and preventing Early Disability” (the SEED-trial) [22]. The SEED-trial is an ongoing randomized controlled trial investigating the effect of individual placement and support vs. traditional vocational rehabilitation in individuals at risk of early work disability in Norway. For additional information about the trial, study design and procedures, see Sveinsdottir et al. 2016 [22].

Participants and recruitment

Ninety-six individuals (65 men (68%) and 31 women (32%)) with a mean age of 24 (SD = 3.25), participated in the study. Participants were young adults aged 18–29 in the year of inclusion, were not in employment or undergoing education, were receiving temporary benefits (mainly WWA, or employment scheme benefits), and were considered by their caseworkers at the Norwegian labor and welfare administration to be eligible for traineeships in sheltered businesses. Traineeships in sheltered businesses are only offered to those with impairment and particularly uncertain work capabilities requiring close follow-up. During June 2014 through December 2016, new eligible clients at one central and nine local labor and welfare offices in and around the city of Bergen, Norway, were referred to meetings to receive information about the study. Referrals were also made by a secondary care district psychiatric center in Bergen, with subsequent follow-up at the local labor and welfare office. At the information meetings, eligible participants were screened on two additional inclusion criteria, before being invited to participate in the trial: 1) Sufficient language skills to answer questionnaires in Norwegian, and 2) interest in receiving help to obtain ordinary work. There were no exclusion criteria based on diagnosis, and participants with any type of social and/or health-related problems were invited. A total of 163 participants attended the information meetings, whereof 67 were excluded or declined participation (Fig. 1).

Data collection

Questionnaires were administered to all participants at the information meetings, either electronically or in paper format. Participants received help and assistance to answer the questionnaires upon request.

Electronic responses were collected using iPads with secure survey software (Qualtrics, Provo, UT), and stored in a secure online database. Responses in paper format were stored in a locked filing cabinet. Personal information and contact details were stored separately from the collected data, in a locked and fireproof safe.

Questionnaire and instruments

In the first part of the questionnaire, information on self-reported background and social variables were collected. Dichotomous variables were computed for education level (less than high school vs. other), reading/writing difficulties (yes vs. no), marital status (single vs. other), living arrangements (living with parents vs. other), number of children (none vs. other), immigrant background (immigrants and Norwegian-born to immigrant parents vs. not), previous participation in employment scheme (yes vs. no), previous employment (yes vs. no), and reasons for unemployment (psychological problems vs. not, other health problems vs. not, and other non-health-related reasons vs. not). Participants were also asked to list whether they had received treatment during the last 6 months, and whether they had received consultations by general practitioners, psychiatrists, psychologists, physio−/manual therapists, chiropractors, or other therapists. Dichotomization of continuous background variables was based on visual inspection of the distributions.

Disability level

Disability level was measured using the 12-item self-administered version of the WHO Disability Assessment Schedule 2.0 (WHODAS 2.0), consisting of a sum-score (Cronbach's α = .87) based on six domains of life: Cognition, mobility, self-care, getting along, life activities, and participation [23]. Each item was scored

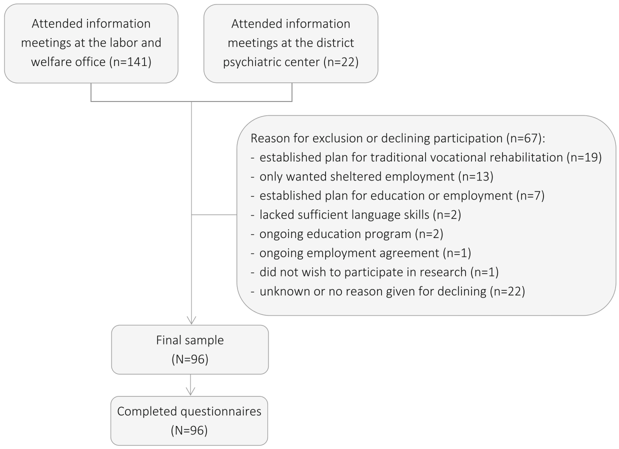

Fig. 1 Flowchart of recruitment of participants

on a 5-point scale ranging from 0 (none) to 4 (extreme or cannot do). A simple scoring strategy without weighting of individual items was used, ranging from 0 (no disability) to 48 (full disability). In cases of up to five missing items, the mean of the remaining items was calculated and multiplied by 12. In addition to the sum-score, cut-off scores of ≥10 for significant disability were used based on the top 10% of the population in normative data [24].

Health behaviors: Alcohol and drug use

Alcohol use was measured using the 3-item Alcohol Use Disorders Identification Test (AUDIT-C) [25]. Items were scored on 5-point scales ranging from 0 to 4, with higher scores indicating higher frequency and quantity of alcohol consumption. Based on a sum-score, validated cutoff-scores of ≥4 for men and ≥ 3 for women were used to indicate hazardous drinking or active alcohol use disorders [26].

Drug use was measured using the 11-item Drug Use Disorders Identification Test (DUDIT) [27]. Items 1–9 were scored on 5-point scales ranging from 0 to 4, and items 10–11 were scored on 3-point scales as 0, 2, and 4, with higher scores indicating more severe drug use. Based on a sum-score, validated cutoff-scores of ≥6 for men and ≥ 2 for women were used to indicate drug-related problems [28].

Bullying

A new eight-item questionnaire was developed in collaboration with Dan Olweus and Jørn Hetland, researchers within the fields of bullying in school and bullying in working life, respectively. The new measure was specifically developed in order to measure lifetime experiences with bullying victimization and bullying perpetration in different social arenas, for respondents who are currently not in employment, education, or training. The items were preceded by a description of bullying according to Olweus's definition [29], describing that bullying can be direct and indirect as well as verbal and physical, and that it involves a perceived power imbalance or difficulty defending oneself. It was emphasized that friendly teasing, and fights or arguments between equal parts were not regarded as bullying.

Bullying victimization was measured using five single items, concerning three arenas: School (2 items, bullied by other students or teachers), working life (2 items, bullied by colleagues or leaders), and other social arenas (1 item). The items were scored on a 5-point scale ranging from 0 (never or almost never), 1 (one short period (a few weeks)), 2 (several shorter periods), 3 (one long period (several months)), to 4 (several longer periods of my time in school/working life/other social arenas). Values ≥2 within each arena were coded as bullying in that arena, and an overall dichotomous variable was created for bullying victimization in any arena vs. bullying in no arena. This is in line with the Olweus definition emphasizing repeated incidences over time rather than the length of an incidence [29], and coincides with how bullying has been categorized in other studies [30].

Bullying perpetration was measured with three single items, corresponding to the method and scale used for bullying victimization as described above. The questions concerned whether the participant him/herself had bullied others in three arenas: School (1 item), working life (1 item), and other social arenas (1 item). Values ≥2 within each arena were coded as bullying in that arena, and an overall dichotomous variable was created for bullying perpetration in any arena vs. bullying in no arena.

An additional dichotomous variable was created for those who reported that they were both victims and perpetrators of bullying (bully-victims).

Violence

Violence was measured using a single item concerning whether participants had been the victim of violence inflicted by others (not counting accidents and common children's fights). If yes, participants were further asked to indicate what types of violent acts they had experienced (being hit, robbery/assault, sexual violence, deprivation of liberty, severe threats, or other), and whether incidents were single or repeated.

Psychological distress

Psychological distress was measured using the 25-item Hopkins Symptom Checklist (HSCL-25), consisting of two subscales: An anxiety dimension (10-items, $\alpha = .82$) and a depression dimension (15-items, $\alpha = .91$), in addition to a mean score ($\alpha = .93$) [31]. Each item was scored on a 4-point scale ranging from 1 (no symptoms) to 4 (severe symptoms). In addition to the mean score, a validated cut-off score of ≥1.75 was used for psychological distress [32, 33].

Fatigue

Fatigue was measured using the 11-item Chalder Fatigue Questionnaire (CFQ) consisting of two subscales: Physical fatigue (7 items, $\alpha = .88$) and mental fatigue (4 items, $\alpha = .67$), in addition to a sum-score ($\alpha = .86$) [34]. Each item was scored on a 4-point scale ranging from 0 (less than usual) to 3 (much worse than usual). In addition to the sum-score, a binary global fatigue score ranging from 0 to 11 was calculated and validated cut-off scores of ≥4 were used for severe fatigue [34, 35].

Sleep problems (insomnia)

Three single items were developed in collaboration with Mari Hysing, researcher within the field of mental health and sleep problems in children and adolescence, to serve as a simple proxy for the diagnostic criteria for insomnia according to the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5) [36]. The first item concerned problems with falling asleep, waking up at night, and/or waking up too early. Respondents were asked to indicate how many nights they experienced each problem during a typical week, on a scale ranging from 0 to 7. If any sleep problems were reported, respondents were asked to proceed to the second and third items, indicating how long the problems had lasted, and how many times a week the problems affected daily life. A dichotomous variable for insomnia was computed based on whether or not one or more sleep problems exceeded three nights a week, had lasted more than 3 months, and affected daily life for more than 3 days a week.

Subjective health complaints

Subjective health complaints were measured using the 29-item Subjective Health Complaints Inventory (SHC), consisting of five subscales: Musculoskeletal pain (8 items, α = .78), pseudoneurology (7 items, α = .73), gastrointestinal problems (7 items, α = .64), allergy (5 items, α = .48), and flu (2 items, α = .56), in addition to a sum-score (α = .82) [37]. Each item was scored on a 4-point scale ranging from 0 (no complaints) to 3 (serious complaints).

Global well-being

Global well-being was measured using a 10-point Cantril Ladder Scale [38], ranging from 1 (the worst life possible) to 10 (the best life possible), asking respondents to indicate on which step of the ladder they feel they stand today, on which step they would say they stood a year ago, and where they believe they will be a year from now.

Social support

Social support was measured using 11-items of the Non-directive and Directive Support Survey [39] as suggested by Øyeflaten et al. (2010), using two subscales: Directive social support (4 items, α = .73) and nondirective social support (7 items, α = .84) [40]. The directive subscale involves instructive support and taking charge of the situation in order to help the recipient, while nondirective support is of a more cooperative nature and involves acceptance of the recipients own thoughts and choices [40]. Each item was scored on a 5-point scale ranging from 1 (not at all typical) to 5 (very typical). The survey also instructs respondents to indicate the specific person to whom they turn for support, and whether this is their doctor, spouse/partner, or “other” including an open response. An additional dichotomous variable was created based on a categorization of whether the support provider was a professional (e.g. doctor, psychologist) vs. personal (e.g. partner, family, friend).

Coping

Coping was measured using the 7-item Theoretically Originated Measure of the Cognitive Activation Theory of Stress (TOMCATS) [41], consisting of three subscales: Coping (1 item), helplessness (3 items, α = .65), and hopelessness (3 items, α = .66). Each item was scored on a 4-point scale ranging from 1 (completely true) to 4 (not true at all). Items were reversed in order for higher scores to reflect higher degrees of coping, helplessness, or hopelessness. Mean scores were calculated for the helplessness and hopelessness subscales.

Illness perceptions

Illness perceptions were measured using the 9-item Brief Illness Perception Questionnaire (BIPQ), where each item measures a different dimension of illness perceptions: *Consequences*—how much the illness affect your life; *timeline*—how long you believe the illness will last; *personal control*—how much control you feel over the illness; *treatment control*—how much you think treatment can help the illness; *identity*—how much you experience symptoms from the illness; *concern*—how concerned you are about the illness; *coherence*—how well you understand the illness; *emotional response*—how much the illness affects you emotionally; and a causal attribution item [42]. Items 1–8 were scored on 11-point scales ranging from 0 to 10, with higher scores reflecting an increasingly threatening view of the illness. Item 9 was open-ended and concerned causal attribution: “Please list in rank-order the three most important factors that you believe caused your illness”. Participants who did not perceive themselves as having any illness, were told to skip this questionnaire.

Data analyses

Descriptive statistics were calculated for the total sample, and by gender. Gender differences were analyzed by chi-square tests for the dichotomous variables and independent t-tests for the continuous variables.

Responses to the open-ended item in the BIPQ regarding causal attribution were categorized using thematic analysis, as described by Joffe & Yardley [43]. Themes were identified and data was categorized into coding categories using a descriptive and inductive approach. A coding manual including category definitions was prepared (Additional file 1), and categorization was performed independently by two authors to determine inter-rater reliability. In cases of inconsistency, categorization was discussed until consensus was reached.

In order to maintain the anonymity of respondents, values with fewer than five respondents are not reported.

Statistical analyses were performed using IBM SPSS Statistics, Versions 24.0 and 25.0. The significance level was set to α = .05.

Results

Background, alcohol and drug use

The majority of participants were male, single, childless, and nearly half were living with their parent(s). Forty percent had less education than high-school and 33% reported reading or writing difficulties (see Table 1 for more background information). Fifty-three percent of participants reported hazardous drinking or active alcohol use disorders, while 15% reported any drug use and 10% scored above the cut-off for drug-related problems. Men were more often single than women and more often reported non-health-related reasons for unemployment.

Adverse social experiences

Among the participants, 66% reported that they had experienced bullying, with school being the most common arena. Fourteen percent reported having bullied others, and 8% were both victims and perpetrators of bullying. A total of 39% of participants reported that they had experienced violence, of which 67% reported repeated incidences. Being hit was the most common type of violence for both genders, and 29% of women reported sexual abuse. There were no gender differences in exposure to either bullying or violence (Table 2).

Health, coping and social support

With the exception of gastrointestinal complaints and global well-being, women consistently reported more physical and mental health problems than men (Table 3). Men also reported higher levels of coping, while women received more nondirective social support than men.

According to predefined cut-off values, 52% of participants reported psychological distress, 42% had severe

Table 1 Background, alcohol and drug use. Total score and comparison of genders

	Total (*N* = 96)		Men (*n* = 65)		Women (*n* = 31)		*p*-value
	n	%	n	%	n	%	
Education							
Less than high school	38	(40)	28	(43)	10	(32)	.311
Reading/writing difficulties	32	(33)	24	(37)	8	(26)	.280
Marital status							
Single	68	(71)	53	(82)	15	(48)	**< .001**
Living arrangements							
With parent(s)	44	(46)	32	(49)	12	(39)	.333
Children							
None	62	(86)	41	(87)	21	(84)	.730[a]
Country of birth							
Immigrant background	15	(17)	10	(16)	5	(17)	1.000[a]
Employment							
Previous employment scheme	59	(64)	41	(67)	18	(58)	.387
Previous employment	56	(59)	35	(55)	21	(68)	.225
Reason for unemployment							
Psychological problems	51	(53)	32	(49)	19	(61)	.268
Other health problems	33	(34)	23	(35)	10	(32)	.763
Other, non-health-related	32	(33)	26	(40)	6	(19)	**.045**
Alcohol use							
Over gender cutoff	51	(53)	33	(51)	18	(58)	.503
Drug use							
Any drug use	14	(15)	9	(14)	5	(16)	.765[a]
Over gender cutoff[b]	10	(10)	–	–	–	–	–

[a] 1 cell had an expected cell count less than 5. Exact *p* value (Fisher's exact test significance) was used

[b] Values for groups with fewer than five respondents in either group are not reported

All values in boldface in the p-value column are statistically significant at the 0.05 or 0.001 level

Table 2 Adverse social experiences, total score and comparison of genders

	Total (*N* = 96)		Men (*n* = 65)		Women (*n* = 31)		*p*-value
	n	%	n	%	n	%	
Bullying, victim	63	(66)	41	(63)	22	(71)	.447
School	56	(58)	36	(55)	20	(65)	
Work[a]	9	(16)[b]	–	–	–	–	
Other social arenas[a]	23	(24)	–	–	–	–	
Bullying, perpetrator[a]	13	(14)	–	–	–	–	
Bullying, victim and perpetrator[a]	8	(8)	8	(12)	–	–	
Violence	37	(39)	23	(35)	14	(45)	.357
Been hit	27	(28)	17	(26)	10	(32)	
Severe threats	14	(15)	9	(14)	5	(16)	
Sexual abuse/violence[a]	–	–	–	–	9	(29)	
All other	15	(16)	9	(14)	6	(19)	
Violence, repeated incidences	24	(67)[c]	13	(59)	11	(79)	

[a] Values for groups with fewer than five respondents are not reported

[b] Percentage of those who had previously worked (*n* = 56)

[c] Percentage of those who had experienced violence and reported frequency (*n* = 36)

Table 3 Health, coping, and social support. Total score and comparison of genders

	Total (*N* = 96)	Men (*n* = 65)	Women (*n* = 31)	*p*-value
	Mean ± SD	Mean ± SD	Mean ± SD	
Disability, 0–48	8.60 ± 7.54	7.56 ± 6.98	10.80 ± 8.29	**.048**
Psychological distress, 1–4	1.85 ± 0.55	1.74 ± 0.47	2.09 ± 0.63	**.007**
Depression, 1–4	1.95 ± 0.64	1.84 ± 0.58	2.18 ± 0.73	**.014**
Anxiety, 1–4	1.70 ± 0.49	1.58 ± 0.41	1.96 ± 0.55	**.001**
Fatigue, 0–33	13.43 ± 5.82	12.41 ± 5.28	15.64 ± 6.40	**.011**
Physical, 0–21	8.68 ± 4.40	8.06 ± 4.22	10.01 ± 4.57	**.045**
Psychological, 0–12	4.75 ± 2.22	4.34 ± 1.90	5.63 ± 2.62	**.019**
Subjective health complaints, 0–87	14.57 ± 9.54	12.02 ± 7.28	19.75 ± 11.45	**.001**
Musculoskeletal, 0–24	4.16 ± 3.95	3.20 ± 3.21	6.12 ± 4.59	**.003**
Pseudoneurology, 0–21	5.76 ± 3.93	4.99 ± 3.43	7.35 ± 4.46	**.012**
Gastrointestinal, 0–21	2.40 ± 2.87	1.91 ± 2.07	3.37 ± 3.90	.059
Global well-being, 1–10				
Today	4.85 ± 1.79	4.79 ± 1.66	5.00 ± 2.07	.593
Past (1 year)	4.00 ± 2.23	4.05 ± 2.05	3.90 ± 2.59	.767
Future (1 year)	7.02 ± 2.13	6.93 ± 2.26	7.22 ± 1.85	.544
Social support				
Nondirective support, 1–5	3.87 ± 0.85	3.70 ± 0.87	4.23 ± 0.67	**.004**
Directive support, 1–5	3.09 ± 0.95	3.10 ± 0.96	3.07 ± 0.94	.874
Coping				
Coping, 1–4	2.63 ± 0.72	2.77 ± 0.68	2.33 ± 0.71	**.006**
Helplessness, 1–4	2.34 ± 0.69	2.33 ± 0.70	2.36 ± 0.70	.857
Hopelessness, 1–4	2.28 ± 0.74	2.21 ± 0.69	2.44 ± 0.82	.176

All values in boldface in the p-value column are statistically significant at the 0.05 or 0.01 level fatigue, and 32% reported severe disability. Twenty-eight percent of participants reported sleep problems corresponding to the DSM-5 criteria for insomnia [36].

Most participants had received treatment during the last 6 months (79%), mainly by their general practitioner (56% of all participants) or by a psychologist/psychiatrist (50% of all participants), while 10% of participants had received treatment by physiotherapist/manual therapist and/or chiropractor, and 14% of participants reported receiving other treatment. More women reported receiving treatment than men (*p* = .017), which was mainly explained by more women receiving treatment by psychologists and/or psychiatrists (*p* = .016).

Illness perceptions and causal attributions

Only participants who perceived themselves as having an illness were told to fill out the BIPQ, and a total of 72 participants (75%) responded (Table 4). Women had a higher belief in treatment being helpful for their illness, and reported that they worried more about their symptoms, than men.

Among those who perceived themselves to have an illness, 51 participants (71%) provided a total of 111 different open-ended responses to the causal attribution item. The most common categories were relational problems, followed by health behaviors, heredity/genetics, and external environmental factors (Table 4). Inter-rater reliability for the categorization, as measured by Cohen's Kappa, was high (κ = .91).

Discussion

Main findings showed a group of NEETs at risk of early work disability, with substantial challenges related to adverse social experiences. Participants also reported high levels of psychological distress and alcohol use, and emphasized relational problems as the main causal factor when asked about their illness perceptions. Women generally reported more physical and mental health problems than men, while men more often reported non-health-related reasons for unemployment.

The low educational attainment found among participants is in line with major risk factors for NEET status and early work disability [4, 12]. Correspondingly, levels of reading and writing difficulties were approximately four times higher than that of a representative sample of Norwegian adolescents [44]. Furthermore, the rate of participants reporting hazardous drinking or active alcohol use disorders appears exceedingly high. It is however

Table 4 Illness perceptions, total score and comparison of genders; and causal attributions, response categories and examples

	Total (*N* = 72)	Men (*n* = 48)	Women (*n* = 24)	
Continuous items, 0–10	Mean ± SD	Mean ± SD	Mean ± SD	*p*-value
Consequences	5.85 ± 3.08	5.48 ± 2.97	6.58 ± 3.22	.153
Timeline	7.38 ± 3.21	7.69 ± 3.15	6.78 ± 3.33	.275
Personal control	5.69 ± 3.18	5.36 ± 3.17	6.33 ± 3.17	.226
Treatment control	4.28 ± 2.98	4.88 ± 2.95	3.21 ± 2.78	**.026**
Identity	5.66 ± 2.81	5.20 ± 2.70	6.50 ± 2.87	.069
Concern	4.63 ± 3.01	4.11 ± 2.78	5.63 ± 3.24	**.045**
Coherence	3.82 ± 3.23	3.45 ± 3.16	4.54 ± 3.30	.178
Emotional response	6.18 ± 3.09	6.09 ± 2.96	6.38 ± 3.39	.711
Causal attribution, open-ended	Number of responses[a]	Example of response		
Relational	20	"Loneliness"		
Health behavior	16	"Used various types of drugs"		
Hereditary/genetic	13	"Genetics"		
External environment	11	"Living situation"		
Bullying	6	"Bullied in childhood"		
Childhood	6	"A lot of moving [...] during my first 7 years"		
Psychological	6	"Social anxiety"		
Self-control/coping	5	"Bad choices"		
Traumatic life events	5	"Sexual abuse"		
Unknown	5	"Cause not explained"		
Other categories[b]	18			

[a] 51 participants provided 111 open-ended responses

[b] Categories with fewer than five respondents (somatic, injury, pressure/demands, financial, fate/fortune) are not reported

All values in boldface in the p-value column are statistically significant at the 0.05 level comparable to that of Norwegian college and university students [45], indicating that the level of consumption is not specific to the group of NEETs at risk of early work disability, but may rather indicate a problem on a societal level. Meanwhile, it could be argued that high levels of alcohol consumption may represent a more worrying problem when observed in a population not involved in employment or educational activities. Being unemployed after leaving school is associated with higher risk-related behavior, including substance abuse and dependence [46]. This coincides with the findings from the current study, as drug use was five times more prevalent than what has been found in normative data [28].

The findings of adverse social experiences in this group were considerable. Among those who had experienced violence, the majority reported repeated incidences, and a large proportion of female participants had been victims of sexual violence. Two in three participants reported being bullied in their past. Levels of bullying are difficult to compare directly to other studies, due to participants being outside of education and employment, which rendered existing measures inappropriate in this setting. However, although the measure used in the current study is broader than previous that of conventional studies of recent bullying in school, the level still appears substantial as compared to a prevalence of 8% in the Norwegian school population [47]. Victimization by bullying has been associated with a range of physical and psychological health problems, relational problems, and lower educational achievement [48]. It can be said to throw a long shadow across the lives of its victims [48], having long-lasting detrimental effects on the individual. Although issues of direction and causality remain unclear, longitudinal designs controlling for pre-existing risk-factors such as earlier symptoms suggest that victims of school bullies have a higher prevalence of psychotic experiences in later adolescence [49], and are at higher risk of depression up to 36 years later [50]. The proportion of bullying perpetration also appeared large, as 14% reported having bullied others, while 3–4% in the general population agree to have bullied others in school [47]. The antisocial behavior of bullying perpetration has previously been associated with negative childhood factors such as high levels of disruptive behavior disorders and social/family hardships [51], and is a strong predictor for future criminality [52]. Furthermore, 8% of participants reported the combination of both bullying victimization and perpetration, a group referred to as bully-victims. Bully-victims have been associated with poorer social and emotional adjustment as seen in victims, in addition to the problem behaviors associated with perpetration, and may represent an especially high-risk group [53].

Levels of coping were lower than that seen in a healthy Norwegian working population [54], which may be expected in a marginalized group at risk of early work disability. The finding that men experienced higher coping than women is however interesting. This can be seen in combination with the findings that women reported worrying more about their symptoms, had a higher belief in treatment being helpful for their illness, and more often sought treatment than men. Patterns of social support also differed between genders, as women reported more nondirective social support than men, and more often had a partner. Comparable studies on NEETs concerning coping and worrying are scarce, but the literature in general suggests that women may be more prone to rumination over symptoms and distress than men, which may contribute in explaining the greater rates of depression among women [55]. Higher rates of treatment seeking among women have been shown in previous studies of e.g. depression [56, 57] and generalized anxiety [58], and genders are likely to differ in how illness perceptions influence coping strategies such as seeking treatment and social support [59]. When asked to indicate one or more reasons for their unemployment, most participants stated psychological problems to be the main cause, while other health-problems and non-health-related problems were equally common. Men did however more often report non-health-related reasons than women, while women experienced more physical and mental health problems.

While NEET status may be a result of poor health, being NEET can also have severe individual consequences on mental and physical health [4]. About one in three had significant levels of disability as opposed to one in ten in normative data [24], and participants displayed high levels of various mental health symptoms including substantial psychological distress and fatigue compared to the general population [32, 60]. Accordingly, severity of pseudoneurological complaints such as tiredness, sadness and anxiety was also high, while musculoskeletal and gastrointestinal complaints were comparable to that of the general population aged younger than 30 [61]. The findings correspond to the diagnoses of young adults that are already receiving disability benefits in Norway, in which mental health problems is the major contributor [16].

The importance of psychological distress and the high prevalence of bullying in this group was further illustrated by participants' self-perceived causal attributions of illness, which mainly concerned different psychosocial factors. The most common causal attribution was relational problems, which included repeated accounts of loneliness, isolation, lack of adequate care, or loss of love or friendship. Additional attributions were directly made to bullying, childhood, and traumatic life events. Few attributions were made to somatic problems or injuries. The exception were hereditary or genetic causal factors, which coincides with register studies showing that intellectual and congenital disorders are common among the youngest group of people with work disability in Norway [17].

While global well-being is generally high in the Norwegian population [62], participants rated their global well-being below the center of the ten-point scale. Albeit low, participants estimated that their level of well-being had been poorer 1 year earlier, and expectations about the future revealed a certain optimism among the participants, as participants on average predicted an increase to 7 in the next year which is closer to the Norwegian population mean at 7.8.

Implications

Given the heterogeneity of the NEET population in Europe, there is need for research and policy measures to target specific subgroups [1, 63], and the current study focuses on a particularly vulnerable group of NEETs at risk of early work disability in Norway. The findings of health-related challenges within the group of young adults in this study are not unexpected when considering the inclusion criteria; all participants were NEETs receiving temporary benefits related to impaired working capacity and were considered to need special assistance with close follow-up. While levels of psychological distress were high, they correspond to previous knowledge about the major reasons for early work disability in Norway [16]. The more notable findings with important implications for measures targeting this group are related to psychosocial factors, including the high prevalence of bullying and exposure to violence. Even though only individuals who considered themselves to have an illness were told to respond to questions related to self-perceived causal attributions, the most common responses were related to non-medical causes, especially relational problems such as loneliness and isolation. In addition to preventive measures to reduce social exclusion by bullying [64] and early dropout [65], the findings call for a broader focus on social as well as psychological factors in vocational rehabilitation efforts for NEETs at risk of early work disability. Furthermore, the needs of women versus men may vary and cause need for gender-specific tailoring in vocational and treatment approaches.

Strengths and limitations

Due to the low number of participants, and multiple comparisons of the large number of outcome measures included in the study, results from analyses comparing gender should be interpreted with caution.

Participants who did not perceive themselves to have an illness were told not to answer the BIPQ, which was reflected in the response rate to this questionnaire (75%). The Norwegian translation of the BIPQ translates illness to a term which may insufficiently emphasize the subjective feeling of illness and may be interpreted as "disease". The distinction between disease, illness, and sickness found in the English language is less defined in Norwegian, which may have led participants who did not perceive their illness as an objectively defined disease to not respond. The finding that one in three participants also answered "non-health-related" when asked about their reasons for unemployment, does however indicate that participants may indeed have not responded to the BIPQ because they perceived their problems to be unrelated to their health.

The broad invitation to participate in the information meetings in the current study included everyone in the target group attending the majority of local labor and welfare offices in the second-largest city in Norway. However, the total number of invitations issued is unfortunately not known. Attrition due to missing invitations or invited participants not attending the information meetings can therefore not be determined. While it is possible that more vulnerable individuals may have missed invitations or declined participation in some cases, several declinations or exclusions of participants were due to ongoing or established plans for employment or education, indicating that the opposite may be true in other cases. Based on these considerations, combined with the long recruitment period and complete response rate among participants, we believe that the sample represents an important segment of young adults at risk of early work disability in Norway, namely those who are on the path towards permanent disability, but who still have a hope of gaining employment.

Conclusions

The results of this study provide a deeper insight into a vulnerable group of NEETs who are at risk of early work disability. Findings of substantial challenges related to bullying, psychological distress, and alcohol use, combined with participants' own causal attributions of illness, emphasize the importance of psychological and relational factors in vocational rehabilitation efforts targeting this important and marginalized group, who are at risk of being permanently excluded from the labor market at an early age. Furthermore, gender-specific approaches may be warranted, and should be followed up in future studies.

Additional file

Additional file 1: Coding manual for self-perceived causal attributions of illness (open responses to the Brief Illness Perception Questionnaire). (PDF 16 kb)

Abbreviations

BIPQ: Brief illness perception questionnaire; DSM-5: Diagnostic and statistical manual of mental disorders, fifth edition; NEET: Young people that are not in employment, education, or training; SD: Standard Deviation; SEED-trial: Supported employment and preventing early disability; WAA: Work assessment allowance

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Availability of data and materials
The dataset from the SEED-trial is not available for public archiving or sharing, as participants did not consent to distribution of data outside the study and its specific conditions regarding confidentiality, privacy protection and data handling, which were approved by the Norwegian Social Science Data Services and described to participants upon recruitment.

Authors' contributions
SER and VS designed the project and applied for funding. VS collected and prepared the data. VS, HRE, VB, JH, and SER contributed in the analyses and interpretation of results and were involved in preparing and revising the manuscript. All authors have read and approved the final manuscript.

Ethics approval and consent to participate
The project was exempted from the Norwegian Regional Committees for Medical and Health Research Ethics who concluded that the SEED-trial did not fall under the Health Research Act. It was approved by the Norwegian Social Science Data Services (project #38271), and is registered in the international trial register ClinicalTrials.gov (NCT02375074). The project adheres to the ethical principles of the Helsinki declaration. All participants received information about their rights to confidentiality and to withdraw from the project at any time without consequences to services or treatment, and gave written informed consent before being included in the study.

Consent for publication
Not applicable.

Competing interests
The authors declare that they have no competing interests.

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Coding manual

Coding manual for self-perceived causal attributions of illness (open responses to the Brief Illness Perception Questionnaire).

1. Relational
   This category includes all responses focusing on relational problems, including loneliness and isolation, end of relationships or friendships, family problems, and lack of social support and care. This includes relational problems in childhood, but excludes bullying, pressure, and violence, which should be placed elsewhere.

2. Bullying
   This category involves all responses mentioning bullying in any arena as a causal factor.

3. Childhood
   Responses that emphasize upbringing and childhood, including living situation during childhood, are placed here. This does however exclude accounts of bullying, violence, and relational/family problems, although occurring in childhood, which should be placed in their respective categories.

4. Psychological
   Causal attributions to psychological complaints and symptoms of mental illness, such as anxiety and depression, should be placed here. This includes e.g. fear and insecurity, but excludes attributions to coping responses characterized as poor by the respondent.

5. Self-control/coping
   This category includes causal attributions to poor coping responses or lack in self-control, such as motivational problems and poor choices in life.

6. Health behavior
   Responses concerning substance abuse (both alcohol and drugs), sleep, diet, lifestyle, physical activity or inactivity, are placed here.

7. Somatic
   This category includes physiological health complaints, pain, and somatic factors that are attributed as the causal factor. Injuries caused by accidents are excluded.

8. Injury
   All references to accidents, e.g. fractures and physical trauma. Deliberately inflicted injury, e.g. violence, is however excluded.

9. Hereditary/genetic
   Responses stating genetic and hereditary causal factors are placed here. This includes congenital illness.

10. External environmental
    This category concerns external factors related to the society or environment that the person is living in. This includes references to society, institutions (e.g. penal or educational institutions), living conditions and general life situation.

11. Financial
    This category involves all responses concerning personal economy and financial problems.

12. Pressure/demands
    This category includes pressure, demands, and general stress, whether the source is external or internal, e. g. pressuring oneself too much.

13. Traumatic life events
    All traumatic life events belong in this category, such as accounts of abuse, violence, and rape. This also includes experiences where the nature of the event is not specified, but where an unnamed event is emphasized as the causal factor.

14. Fate/fortune
    Reponses concerning a predetermined course of events due to destiny or fate, along with attributions to uncontrollable factors determined by bad luck or fortune, are placed here.

15. Unknown
    This category concerns responses where causal factors are stated as none, or unknown, or not understood.

III

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Individual placement and support for young adults at risk of early work disability (the SEED trial). A randomized controlled trial

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Sveinsdottir V, Lie SA, Bond GR, Eriksen HR, Tveito TH, Grasdal AL, Reme SE. Individual placement and support for young adults at risk of early work disability (the SEED trial). A randomized controlled trial. *Scand J Work Environ Health* – online first. doi:10.5271/sjweh.3837

Objectives Individual placement and support (IPS) is an effective approach for helping people with severe mental illness gain employment. This study aimed to investigate if IPS can be effectively repurposed to support young adults at risk of early work disability due to various social and health related problems.

Methods A randomized controlled trial including 96 young adults (18–29 years; 68% men) was conducted in Norway. Participants were not in employment, education, or training, received temporary benefits due to social or health-related problems, and were eligible for traditional vocational rehabilitation (TVR). Participants were randomized to IPS (N=50) or TVR (N=46). Self-reported data were collected at baseline and at 6- and 12-months follow-up. The primary outcome was obtaining any paid employment in the competitive labor market during follow-up. Secondary outcomes were physical and mental health, well-being, coping, alcohol consumption, and drug use.

Results Significantly more IPS participants obtained competitive employment compared to TVR participants during 12-months follow-up (48% versus 8%; odds ratio 10.39, 95% confidence interval 2.79–38.68). The IPS group reported significantly better outcomes than the TVR group in subjective health complaints, helplessness, and hopelessness. In post hoc analyses adjusted for baseline and missing data, the IPS group reported significantly better outcomes on these measures in addition to level of disability, optimism about future well-being, and drug use.

Conclusions IPS is effective for young adults at risk of early work disability. IPS was superior to TVR in increasing competitive employment and promoted improvements in some non-vocational outcomes. IPS services should be offered to improve employment rates in this vulnerable group.

Key terms health; intervention; NEET; RCT; supported employment; vocational rehabilitation; work.

High rates of young people who are not in employment, education, or training (NEET) represent an important international challenge (1). The NEET population is diverse, and includes individuals who are short-term unemployed or in temporary transition-phases, as well as other more vulnerable groups at higher risk of lifelong disengagement (2).

Exclusion from the labor market is associated with adverse health effects (3, 4) and leads to considerable societal costs (1). In Norway, disability benefits are offered as income compensation for individuals with permanently reduced earning capacity. During the last decade, there has been a shift in disability benefits toward younger recipients, and the share of young adults aged 18–29 has increased considerably (5). This group differs from the older beneficiaries as the majority (56%) of young recipients are male compared to 42% across all age groups. In addition, 63% of the disability determinations in the 18–29-year-old age group are attributed to mental and behavioral disorders compared to 35% across

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all age groups. The dominant role of mental and behavioral disorders is not unique in a Norwegian context but is among the leading causes for years lost due to disability among youth in most high-income countries (6).

Given the heterogeneity of the NEET population, efforts to integrate young people into employment should target specific subgroups. Existing policies bear the risk of being more appropriate for those who are work-ready while failing to reach more disadvantaged groups (1). A recent systematic review found limited evidence for effective re-engagement interventions for NEET, and emphasized that existing knowledge is insufficient to guide policy-makers in the planning and implementation of new programs (7).

The individual placement and support (IPS) model of supported employment is an evidence-based intervention that is effective in improving competitive employment outcomes for patients with severe mental illness (8). While IPS generally does not directly improve non-vocational outcomes (9), competitive employment has beneficial effects, including reduced symptoms and increased self-esteem (10). The IPS model is based on eight principles emphasizing focus on competitive employment, rapid job search, no exclusion due to evaluation of work readiness or other reasons, attention to client preferences, long-term individualized support, integrated services, systematic job development, and benefits counseling (11). While the model was originally developed for patients with severe mental illness, recent studies suggest that it may be effective for other disability groups (12). No previous studies have however investigated the effectiveness of IPS for young adults at risk of early work disability due to various social and health-related problems, that may or may not involve mental illness.

The project "Supported Employment and preventing Early Disability" (SEED) aimed to investigate whether IPS can be repurposed to serve NEET at risk of early work disability in Norway. The SEED trial also aimed to evaluate the effectiveness of IPS compared to traditional vocational rehabilitation (TVR) on outcomes of competitive employment as well as physical and mental health and well-being.

Methods

Trial design

SEED was a two-armed randomized controlled trial (RCT) comparing IPS to TVR. The trial was investigator-initiated and funded by the Research Council of Norway. The Norwegian Regional Committees for Medical and Health Research Ethics exempted the project as it did not fall under the Health Research Act (13) and referred it to the Data Protection Services at the Norwegian Centre for Research Data, which approved the project (project #38271). All participants gave written informed consent before study inclusion, and the ethical principles of the Helsinki declaration were followed. The project was registered in ClinicalTrials.gov (registration #NCT02375074), and the study protocol is available online (14).

Eligibility criteria

The eligibility criteria for SEED included: (i) age 18–29 at year of inclusion; (ii) not in employment or education; (iii) receiving temporary benefits from the Norwegian Labor and Welfare Service (NAV), and thereby required to keep up to an activity plan involving treatment and/or vocational rehabilitation while work ability is being assessed; (iv) considered eligible for and expected to participate in the TVR intervention "traineeship in a sheltered business" by the individual's caseworker at NAV. Eligibility applies to individuals with impaired work capability that require close and broad supervision and assistance (15).

Exclusion criteria were not expressing interest in getting help to obtain competitive work upon inclusion and insufficient language skills to answer questionnaires in Norwegian. There were no exclusion criteria based on diagnosis, and individuals with any type of social or health-related problem were invited to participate.

Recruitment, randomization, and blinding

The recruitment period lasted from June 2014 through December 2016. Eligible participants were referred to information meetings by staff at one central and nine local labor and welfare offices in and around the city of Bergen, or at a secondary care district psychiatric center with subsequent follow-up at the local labor and welfare office. Eligible participants were given verbal and written information by the project coordinator and invited to participate.

After participants agreed to participate and completed the baseline questionnaire, they were randomly assigned to one of two conditions using a computer-generated randomization sequence with a block size of 8 and a 1:1 randomization ratio to the two groups. The ratio was temporarily changed for a period of three months to 2:1 (with two participants assigned to IPS for every one assigned to TVR), in order to enable sufficient caseloads for the job specialists. Staff at Uni Research Health carried out the randomization and communicated the results to the individual's caseworker at NAV by email. Created by a statistician who had no contact with the participants, the randomization sequence was concealed from participants, service providers, and the researcher responsible for controlling the data analyses. The researcher responsible for quality control of the data analyses was blinded for intervention assignment.

Interventions

Both IPS and TVR were offered by vocational rehabilitation organizations overseen by the NAV, which provides employment services to temporary benefit recipients in Norway.

Individual placement and support (IPS). IPS participants were referred to an organization with two trained job specialists. The specialists sought to follow the IPS principles (11) and find a good job match while avoiding the use of prevocational training or subsidized or unpaid work. Unlike traditional vocational approaches, IPS focuses exclusively on competitive employment, clients are not screened for job readiness, client preferences guide choices and decisions, and job specialists continue to provide ongoing support after clients attain employment. An IPS team leader supervised the job specialists, and an external IPS trainer advised the team. Because the study population had various social and health-related challenges that did not necessarily involve mental illness, the IPS principle of integrating services with mental health treatment was not implemented, although job specialists contacted health personnel involved in the treatment of individual participants in cases where this was applicable and accepted by the participant. The intervention was offered for up to three years, and the duration and intensity depended on individual needs and preferences.

Traditional vocational rehabilitation (TVR). The TVR group was referred to an organization offering a traditional employment scheme called “traineeship in a sheltered business”, aiming to improve the opportunities for finding a job (15). This intervention represented treatment as usual and served as an active control condition. The traineeships involved testing work capability and providing preparatory work training adapted to the individual’s challenges and skill level, in a sheltered setting with close follow-up. According to usual practice, participants were allocated to various sheltered businesses in the area providing different types of work settings, including food and catering, child care, mechanic services, transportation services, and warehouse handling, based on individual interests and goals as well as availability. The intervention was offered for up to two years, and the duration was customized to the individual’s options on the labor market. The usual intensity of the intervention is full-time, with a requirement of ≥50% of full-time (15).

Data collection

Data were collected using questionnaires distributed at baseline, and 6 and 12 months after enrollment. For more information about data collection and management, see the study protocol (14). In order to increase the response rate to the primary outcome, non-respondents were contacted by telephone, text message, and e-mail. Participants who provided ambiguous responses to the primary outcome in the questionnaire were also contacted by telephone for clarification. In cases where contact was not obtained, log-books from the job specialists were used to provide information on the primary outcome for IPS participants (N=7).

Outcomes

Primary outcome: competitive employment (12-months follow-up). The primary outcome was *any* competitive employment during the 12-months follow-up. Competitive employment was defined as paid employment in the competitive labor market, and thus did not include subsidized or unpaid work. It was measured by self-report using a single item asking the participants to indicate the number of weeks, days, or hours worked in competitive employment during the first 12 months after enrollment. A dichotomous variable indicating any competitive work versus no competitive work was created.

Secondary employment-related outcomes (12-months and long-term follow-up). Additional standardized indicators of successful employment (16) during 12-months follow-up included percentage of participants ever working ≥20 hours per week, total number of hours worked, weeks from enrollment to first job, and weeks worked at longest-held job, were also included in the questionnaires.

Register data on benefit recipiency and income from NAV, and financial assistance and educational activity from Statistics Norway, will also be collected during long-term follow-up for up to five years after enrollment.

Secondary health-related outcomes (6- and 12-months follow-up). Secondary outcomes were level of *disability*, using the World Health Organization Disability Assessment Schedule (WHODAS) 2.0 (17); *psychological distress*, using the Hopkins Symptom Checklist (HSCL-25) (18, 19); severity of *subjective health complaints*, using the Subjective Health Complaints Inventory (SHC) (20); *fatigue*, using the Chalder Fatigue Questionnaire (CFQ) (21); *coping, helplessness and hopelessness*, using the Theoretically Originated Measure of the Cognitive Activation Theory of Stress (TOMCATS) (22); *alcohol consumption*, using the Alcohol Use Disorders Identification Test consumption questions (AUDIT-C) (23); and *drug use*, using the Drug Use Disorders Identification Test consumption questions (DUDIT-C) (24, 25). *Global well-being* was measured using a 10-point Cantril Ladder Scale (26) ranging from 1 (worst life possible) to 10 (best life possible) asking about the current situation, the situation one year ago, and one year in the future. This measure replaced the EQ-5D measuring quality of life described in the study protocol (14), in order to shorten the questionnaire. Higher scores on each scale indicated higher levels of the respective outcome. Measures of social support and illness perceptions, which were also included in the study protocol (14), will be investigated in a future paper examining moderators of treatment effects.

Fidelity and process measures for the IPS intervention. To assess the adherence to the evidence-based IPS Supported Employment Fidelity Scale (27), the external IPS trainer regularly conducted fidelity reviews throughout the project period. Each review was conducted over two consecutive days and involved document and calendar review, observations, and interviews of the different stakeholders. The scale consists of 25 items rated on a 5-item behaviorally anchored scale with total scores ranging from 25–125; scores ≤73 do not fulfill the minimal criteria for IPS.

IPS participants received additional questions at follow-up related to adherence to and satisfaction with the intervention. At 6- and 12-months follow-up, participants were asked to indicate on 5-point scales how satisfied they were with the intervention in general; how satisfied they were with their job specialist; and how useful it had been to participate in the intervention. In addition, IPS participants were asked at 6-months follow-up whether or not they had initiated at least one of the goals they had set with their job specialist during their first meetings (eg, finding references, drafting their CV), and to indicate barriers and helpful factors for participation.

Sample size

A required sample size of 124 participants was estimated based on input data from previous IPS studies with a mean competitive employment rate of 61% for IPS and 23% for control groups (28). Calculations were performed using the Hmisc library in the statistical package R (29), based on a 5% significance level and a power of 90%, accounting for stratified analyses to investigate treatment effects for two sub-groups (eg, gender).

Statistical analysis

Descriptive statistics on demographic and health-related characteristics were calculated for the total sample and each intervention group at baseline. Baseline differences between the groups, and between respondents and non-respondents at follow-up, were analyzed using chi square tests for dichotomous variables and independent t-tests for continuous variables.

Analysis on the primary outcome was conducted using chi square test comparing crude employment rates of participants in each group. The odds ratio (OR) was also calculated. Rates of working ≥20 hours per week were compared with the same method, and number of hours worked were compared using t-tests. In order for effect sizes to be comparable across dichotomous and continuous outcomes, the effect size for differences between proportions was calculated using the arcsine formula (30).

For the secondary health-related outcomes, unadjusted differences between groups at each follow-up point were compared using t-tests. However, due to multiple observations for participants, at baseline and 6 and 12 months, and to adjust for missing observations and baseline ratings on each outcome, post hoc analyses with mixed effects regression models were also applied. In the mixed effect model, maximum likelihood estimation (MLE) will robustly adjust for missing observations. Using this approach accounts for complex structures of missing data (31).

All analyses followed the intention-to-treat (ITT) principle according to the randomized groups, regardless of compliance per protocol. The significance level was α=0.05. Analyses were performed using IBM SPSS Statistics version 25.0 (IBM Corp, Armonk, NY, USA) and StataIC version 15 (StataCorp. College Station, TX, USA).

Results

Participant flow

A total of 98 participants were included and randomized (50 to IPS and 46 to TVR). Two participants were excluded before intervention and follow-up due to ineligibility according to the inclusion criteria (figure 1). The final sample consisted of 96 participants [68% male, mean age 24 (SD 3.25) years].

The response rate for the primary outcome (main analysis) was N=83 (86%), and there was no significant difference in response rate between the groups (P=0.098). The response rate on questionnaires with secondary outcomes was 72% at 6-months follow-up, dropping to 64% at 12-months follow-up. There was a significant difference in response rate between IPS and TVR groups at 6-months follow-up ($\chi^2(1)=7.59$, P=0.006, Cohen's *d*=0.57) but no significant difference at 12-months follow-up (P=0.602).

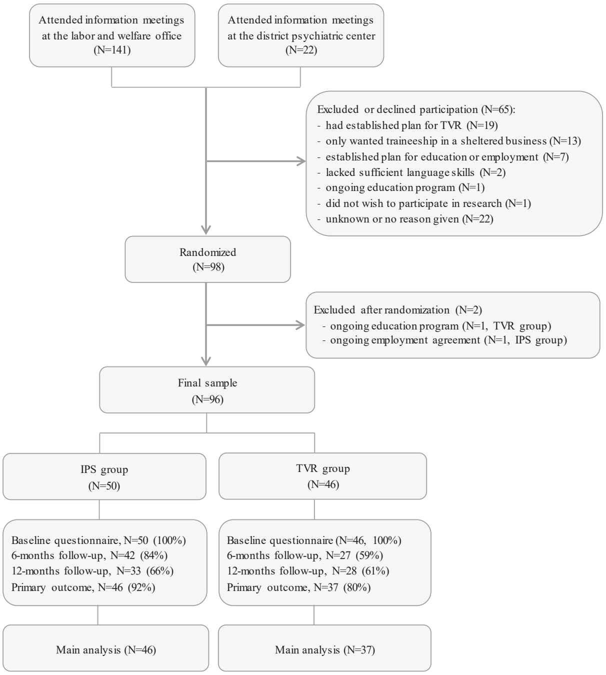

Figure 1. Participant flow throughout the trial. [IPS=individual placement and support; TVR=traditional vocational rehabilitation.]

Table 1. Baseline demographic and health-related characteristics and comparison of groups. [IPS=individual placement and support; TVR=traditional vocational rehabilitation; SD=standard deviation; WHODAS=World Health Organization Disability Assessment Schedule; HSCL=Hopkins Symptom Checklist; CFQ=Chalder Fatigue Questionnaire; SHC=subjective health complaints; TOMCATS=theoretically originated measure of the cognitive activation theory of stress; AUDIT=Alcohol Use Disorders Identification Test; DUDIT=Drug Use Disorders Identification Test.]

Variables	IPS (N=50)				TVR (N=46)				
	N	%	Mean	SD	N	%	Mean	SD	P-value
Age at inclusion			23.96	3.46			23.85	3.04	0.867
Gender (male)	32	64.00			33	71.74			0.418
Education (less than high-school)	24	48.00			14	30.43			0.079
Previously held a job	27	54.00			29	64.44			0.301
Previously attended employment scheme	31	63.27			28	65.12			0.853
Reasons for unemployment [a]									
Psychological problems	25	50.00			26	56.52			0.522
Other health problems	18	36.00			15	32.61			0.727
Non-health related problems	18	36.00			14	30.43			0.563
WHODAS (0–48)			8.18	8.12			9.07	6.92	0.566
HSCL (1–4)			1.81	0.58			1.89	0.52	0.468
HSCL depression (1–4)			1.91	0.69			2.00	0.59	0.464
HSCL anxiety (1–4)			1.67	0.47			1.73	0.52	0.525
CFQ (0–33)			12.93	5.60			13.96	6.07	0.394
CFQ physical (0–21)			8.40	4.19			8.98	4.65	0.524
CFQ mental (0–12)			4.53	2.20			4.98	2.25	0.329
SHC (0–87)			13.96	9.71			15.23	9.41	0.522
SHC musculoskeletal (0–24)			3.88	4.02			4.46	3.89	0.480
SHC pseudoneurology (0–21)			5.45	3.56			6.11	4.32	0.412
SHC gastrointestinal (0–21)			2.64	3.33			2.12	2.27	0.375
Global well-being, current (1–10)			4.69	1.58			5.03	2.00	0.363
Global well-being, past (1–10)			4.15	2.17			3.83	2.31	0.487
Global well-being, future (1–10)			6.83	2.18			7.23	2.08	0.378
TOMCATS coping (1–4)			2.63	0.76			2.62	0.68	0.944
TOMCATS helplessness (1–4)			2.36	0.66			2.31	0.73	0.730
TOMCATS hopelessness (1–4)			2.33	0.79			2.23	0.67	0.490
AUDIT-C (0–12)			3.30	2.40			3.39	2.56	0.857
DUDIT-C (0–16)			0.47	1.46			0.37	0.97	0.698

[a] Participants could choose more than one option.

Baseline characteristics

There were no significant differences between the groups on demographic or health-related variables at baseline (table 1). For more information on baseline characteristics, see Sveinsdottir et al. (32).

There were no significant baseline differences between respondents and non-respondents at 6-months follow-up. Respondents at 12-months follow-up were, however, more likely than non-respondents to be female ($\chi^2(1)=5.78$, P=0.016, Cohen's *d*=0.54) and to have more than a high school education ($\chi^2(1)=7.10$, P=0.008, Cohen's *d*=0.55), but did not differ significantly on health-related variables.

When comparing baseline differences between the reduced samples of respondents in the IPS and TVR groups, respondents to 6-months follow-up in the TVR group reported higher baseline global well-being (mean 5.73, SD=1.96, N=22) than respondents in the IPS group (mean 4.71, SD=1.69, N=35), $t(55)=2.07$, P=0.043, Cohen's *d*=0.55. There were no significant baseline differences between respondents to 12-months follow-up in the IPS and TVR groups.

Primary and secondary employment-related outcomes

Compared to the TVR group, a significantly higher proportion of the IPS group obtained competitive employment at any time during the 12-months follow-up period (table 2). A significantly higher proportion of the IPS group had also ever worked ≥20 hours per week, and participants in the IPS group worked more hours on average, compared to the TVR group (table 2).

Due to problems in the data collection of weeks from enrollment to first job, and weeks worked at longest-held job, data on these outcomes were insufficient and are not reported.

The register data with long-term follow-up have a time lag, and will be reported after they are available.

Secondary health-related outcomes

Unadjusted analyses. Groups did generally not differ in secondary outcomes in the unadjusted analyses, with some exceptions in favor of the IPS group in severity of subjective health complaints and helplessness at 6-months follow-up, and in hopelessness at 12-months follow-up (table 3).

Adjusted post hoc analyses. In the adjusted post hoc analyses, participants in the IPS group reported significantly more positive effects on secondary outcomes of anxiety (P=0.045), subjective health complaints (P=0.001), pseudoneurology (P=0.033), helplessness (P=0.002), hopelessness (P=0.029), and drug use (P=0.043) compared to the TVR group at 6-months follow-up. With the exception of anxiety and pseudoneurology, effects were maintained at 12 months, for subjective health complaints (P=0.017), helplessness (P=0.017), hopelessness (P=0.006), and drug use (P=0.036). Participants in the IPS group also showed significantly lower levels of disability (P=0.038) and more optimism about future well-being (P=0.038) at 12 months compared to the TVR group.

Fidelity to the IPS model and participants' experiences with the intervention. Five fidelity reviews were conducted in June and December of 2015 and 2016 and in July 2017, coinciding with the time period of recruitment and 12-months follow-up. Due to the adaptions made to the IPS intervention noted above, fidelity items concerning integration with mental health treatment were rated as 1 (lowest score). The total score for the first review started at a low point of 47, and there was a general increase up to a score of 77 at the last review. Three of five reviews were above the cut-off for "fair" fidelity (29).

At 6-months follow-up, most participants in the IPS group (N=36, 95%) reported having initiated at least one of the goals they had set with their job specialist. At 6-months follow-up, N=30 (77%) were quite or very

Table 2. Primary and secondary employment-related outcomes, and comparison of groups. [SD=standard deviation; OR=odds ratio; CI=confidence interval; IPS=individual placement and support; TVR=traditional vocational rehabilitation.]

Variables	Group	N	%	Mean	SD	P-value	Cohen's d	OR	95% CI
Primary outcome									
Competitively employed [a]	IPS	22	47.83			<0.001	0.96	10.39	2.79–38.68
	TVR	3	8.11						
Secondary outcome									
Ever worked ≥20 hours per week [b]	IPS	14	33.33			0.002	0.77	8.75	1.83–41.75
	TVR	2	5.41						
Hours worked [c]	IPS			140.02	249.36	0.002	0.70		
	TVR			13.95	55.48				

[a] Data for competitive employment were available for N=83 (86% of the total sample, IPS N=46, 92% and TVR N=37, 80%).

[b] Data for working ≥20 hours per week were available for N=79 (82% of the total sample, IPS N=42, 84% and TVR N=37, 80%).

[c] Data for hours worked were available for N=80 (83% of the total sample, IPS group N=43, 86% and TVR group N=37, 80%).

satisfied with their job specialist, N=28 (72%) were quite or very satisfied with the intervention, and N=26 (68%) reported that participation had been quite or very useful. At 12-months follow-up, N=20 (63%) were quite or very satisfied with their job specialist, N=19 (59%) were quite or very satisfied with the intervention, and N=16 (50%) reported that participation had been quite or very useful. Challenges with illness was the most common barrier for participating in the intervention (N=18, 53%) followed by the content of the intervention not meeting expectations (N=7, 21%) and transportation challenges (eg, meeting the job specialist or potential employers) (N=7, 21%). The most commonly reported helpful factors were the availability of the job specialist (N=30, 83%), having the choice of whether or not to disclose their illness to employers or others (N=29, 83%), regular follow-up from the job specialist (N=25, 81%), and having specific steps in the individualized job search plan during the process (N=25, 76%).

Discussion

The SEED trial compared two contrasting vocational rehabilitation approaches for young adults assessed as having impaired work capability and who were not in education, employment, or training. IPS was superior to TVR in increasing participation in competitive employment among this group.

Participants who received IPS were more likely to be competitively employed during one year follow-up compared to participants receiving treatment as usual in TVR. Additionally, IPS participants worked more hours, and more often worked ≥20 hours per week. These results, together with the fidelity and process measures, show that the IPS methodology can be applied to young adults at risk of early disability due to social or health-related problems that do not necessarily involve mental illness. The findings are in line with previous literature of IPS for patients with severe mental illness, showing that IPS is more effective than control conditions in promoting competitive employment (33). The employment rates of 48% versus 8% are similar to findings from a recent Swedish IPS study (34).

Only 8% of TVR participants obtained any competitive employment during follow-up. Although the TVR intervention involves prevocational training with close follow-up aimed at finding a job (15), the sheltered nature of the approach may preclude competitive employment by placing participants in a training situation outside the labor market and in an environment with others who are in the same situation. Although the current study does not have data on the duration and intensity of the intervention for the individual participants, the results indicate that participation in TVR may have left little time for efforts aimed toward attaining competitive employment. The results strongly suggest that providing direct support to finding and keeping competitive jobs rather than preparing clients in sheltered training settings is a more

Table 3. Secondary health-related outcomes for each group at 6- and 12-months follow-up, and comparison of groups (unadjusted analyses). [IPS=individual placement and support; TVR=traditional vocational rehabilitation; WHODAS=World Health Organization Disability Assessment Schedule; HSCL=Hopkins Symptom Checklist; CFQ=Chalder Fatigue Questionnaire; SHC=subjective health complaints; TOMCATS=theoretically originated measure of the cognitive activation theory of stress; AUDIT=Alcohol Use Disorders Identification Test; DUDIT=Drug Use Disorders Identification Test.]

	6-months follow-up								12-months follow-up							
	IPS			TVR					IPS			TVR				
	N	Mean	SD	N	Mean	SD	P-value	Cohen's d	N	Mean	SD	N	Mean	SD	P-value	Cohen's d
WHODAS (0–48)	37	10.37	9.47	24	9.83	8.64	0.820	0.06	31	9.70	7.31	25	13.30	8.19	0.088	0.46
HSCL total (1–4)	38	1.74	0.59	24	1.95	0.54	0.165	0.37	30	1.79	0.63	26	2.00	0.60	0.220	0.33
HSCL depression (1–4)	38	1.84	0.72	24	2.04	0.56	0.254	0.31	30	1.89	0.74	26	2.15	0.72	0.183	0.36
HSCL anxiety (1–4)	38	1.60	0.49	24	1.82	0.60	0.115	0.41	30	1.65	0.53	26	1.77	0.55	0.403	0.23
CFQ total (0–33)	38	14.05	6.34	24	14.73	4.74	0.656	0.12	30	14.19	5.99	26	14.52	5.07	0.823	0.06
CFQ physical (0–21)	38	9.32	4.77	24	9.86	3.50	0.631	0.13	30	9.55	4.30	26	9.42	3.80	0.903	0.03
CFQ mental (0–12)	38	4.74	2.37	24	4.88	1.88	0.810	0.06	30	4.63	2.40	26	5.08	2.00	0.460	0.20
SHC total (0–87)	36	12.44	10.15	24	18.13	11.58	0.049	0.52	27	14.01	10.35	25	18.05	10.63	0.172	0.38
SHC musculoskeletal (0–24)	36	3.47	3.68	24	4.99	4.73	0.167	0.36	28	4.00	4.11	26	5.60	3.89	0.149	0.40
SHC pseudoneurology (0–21)	37	5.32	4.86	24	7.83	4.87	0.055	0.51	28	5.84	4.19	25	6.85	4.49	0.397	0.23
SHC gastrointestinal (0–21)	37	2.61	3.56	24	2.65	2.46	0.958	0.01	27	2.85	3.44	25	2.67	3.18	0.846	0.05
Global well-being, current (1–10)	36	4.56	1.73	22	5.14	2.49	0.344	0.27	30	4.83	1.90	25	4.72	2.13	0.836	0.06
Global well-being, past (1–10)	36	3.36	1.74	22	3.91	1.97	0.274	0.29	31	3.65	1.76	25	4.20	2.35	0.317	0.26
Global well-being, future (1–10)	35	6.36	2.58	22	6.77	2.56	0.555	0.16	30	8.53	10.87	25	6.06	2.61	0.272	0.31
TOMCATS coping (1–4)	39	2.77	0.78	23	2.83	0.49	0.725	0.09	29	2.79	0.62	25	2.76	0.88	0.872	0.04
TOMCATS helplessness (1–4)	39	2.34	0.77	24	2.79	0.69	0.021	0.62	29	2.40	0.71	26	2.67	0.69	0.167	0.38
TOMCATS hopelessness (1–4)	37	2.18	0.66	24	2.45	0.67	0.124	0.41	29	2.08	0.75	25	2.52	0.83	0.046	0.55
AUDIT-C (0–12)	38	3.08	2.55	26	3.62	3.48	0.479	0.18	31	2.81	2.40	26	3.58	2.93	0.280	0.29
DUDIT-C (0–16)	37	0.14	0.59	26	0.85	2.17	0.114	0.45	30	0.27	0.87	24	1.04	2.74	0.194	0.38

effective way to reintegrate vulnerable NEET into the competitive labor market.

Although participants were generally satisfied with the IPS intervention, the program scored low on fidelity. The quality of the implementation was thus below fidelity benchmarks attained in many prior IPS studies. One continuing weakness in IPS implementation was the lack of integration between employment and health care services. Other issues were low scores on providing follow-up after employment, assertive engagement and outreach for clients who missed appointments, agency focus on competitive employment, and job specialists spending too much time on non-vocational services. Previous studies have shown that higher fidelity is associated with better employment outcomes (35, 36), which may also be true for this population, but this cannot be demonstrated until a high fidelity IPS program has been evaluated. These issues should therefore be considered in future efforts to provide IPS to non-psychiatric populations and may, for example, require the establishment of more structured routines to integrate any relevant health services in the intervention.

Participants mainly reported psychological problems as a reason for unemployment at baseline, which mirrors the statistics of youth in high-income countries (6) as well as young disability benefit recipients in Norway (37). Other health or non-health related reasons were however also common, which illustrates the sample's diversity in terms of type of social and health-related problems compared to previous IPS trials. Baseline characteristics among the participants are discussed in more detail in a previous paper (32), showing that the prevalence of adverse social experiences (ie, bullying and violence) was highly prevalent, while more than half of participants also reported scores above predefined cut-offs for psychological distress as well as alcohol use, and about one third reported severe disability. Findings on secondary health-related outcomes at follow-up were inconsistent, but indicated that IPS also had more favorable effects on some non-vocational outcomes. Unadjusted analyses showed few significant findings, but the loss to follow-up resulted in reduced power and possibly increased risk of type-II error. In the adjusted analyses, participants in the IPS group had significantly less disability, subjective health complaints, drug use, helplessness and hopelessness, and a more optimistic view on future well-being, compared to the TVR group. The findings provide an interesting addition to the existing IPS literature, which has generally not found effects on non-vocational outcomes (9). The finding that participants felt more helpless and hopeless after receiving TVR compared to IPS, indicates that traditional sheltered interventions may preclude individual's feelings of control and promote the belief that the actions they take may not have any effect on their situation, or even make it worse (38). The current study is also the first to demonstrate positive outcomes of IPS on drug use and optimism about future well-being. Findings on disability and subjective health complaints are however in line with a recent Norwegian trial of patients with moderate and severe mental illness (39) but appear weaker and more inconsistent on outcomes related to mental health. This may be partly explained by characteristics of the sample in the current study, who generally had less severe psychiatric symptoms than IPS participants in previous trials. It is however also important to note that participation in IPS was not associated with any negative impact on health, even though participants represented a vulnerable group qualified for sheltered work training. This aligns with the previous research on IPS (40) and suggests that concerns for potential detrimental health effects of non-sheltered approaches for this group may be unsubstantiated.

Strengths and limitations

The main strengths of the current study include the rigorous RCT design and the investigation of IPS for a new and important target group. The study addresses an established need in the literature for effective interventions to help NEET enter the labor market (1) and indicates that IPS may have the potential to forestall entry into the disability system for this group.

The study also has several limitations. The relatively small sample size precluded subgroup analyzes and may reduce generalizability. Although findings on the main outcome were strong, the confidence interval was large, indicating that there is need for larger replication studies to confirm the results. The power calculation was only performed for the primary outcome, and the small sample size reduces the chance of reaching statistical significance, in particular for secondary outcomes with missing data at follow-up. Differential attrition at 6-months is a threat to internal validity. This was mitigated by applying mixed effects models (with MLE), which is a recommended approach to handle complex structures of missing data (31). Due to the considerable number of secondary outcome measures included in the study, alpha inflation is a concern, suggesting caution in interpreting these findings.

The dichotomous primary outcome is a simplistic measure, which may be too crude to capture the many aspects of employment (16). It is however the most commonly used outcome in previous IPS studies and serves as a useful general-purpose measure (16), which was supplemented with data on ever working ≥20 hours per week and the continuous measure of hours worked. Due to problems in the data collection we were however unable to collect sufficient data on further indicators of successful employment, which represents a limitation to the study. The use of self-report data for competitive employment may also increase the risk of bias, and it is also uncertain whether the effects will hold up in the long-term. This will be followed up in a subsequent paper with objective register data from the NAV, which will provide a more conservative, yet reliable and complete measure of labor market participation for up to five years after enrollment. These data will also form the basis for a cost-benefit analysis.

Data on potential harms was not collected in the study. There were routines for reporting and handling any harms/adverse effects reported directly to the project group or to the job specialists, but there were no such reports.

Concluding remarks

The results showed that IPS can be successfully applied to NEET with impaired work capability due to various social or health-related problems. IPS was superior to TVR in increasing participation in competitive employment among this group, and also promoted improvements in level of disability, subjective health, feelings of helplessness and hopelessness, and drug use, when adjusted for missing observations. Based on the results from the current study, we recommend that IPS services should be offered to improve labor market participation among young adults at risk of early work disability.

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APPENDICES

I. Letter of exemption from the Regional Committee for Medical and Health Research Ethics, Western-Norway

II. Approval from the Data Protection Services at the Norwegian Centre for Research Data/Norwegian Social Science Data Services (in Norwegian)

III. Informed consent form (in Norwegian)

IV. Baseline questionnaire package (in Norwegian)

REK
REGIONALE KOMITEER FOR MEDISINSK OG HELSEFAGLIG FORSKNINGSETIKK

Regional Committee for Medical and Health Research Ethics, Western-Norway

To whom it may concern

Date
06.07.2016

Confirmation; - Exempt Review Status

Regarding the research project "Supported Employment and preventing Early Disability (the SEED-trial)"

The Norwegian Regional Committees for Medical and Health Research Ethics (REC) review research projects falling within the Health Research Act, defining medical and health research as "activity conducted using scientific methods to generate new knowledge about health and disease". The purpose is decisive; not whether the research is carried out by health professionals or on patients or makes use of personal health information.

Having discussed your project and considered the information provided, we confirm that this project does not fall under the Health Research Act, and is therefore outside of REC's remit and not subject to evaluation.

With kind regards,

Anna Stephansen
Kontorsjef
Tel. 55 97 84 96
Mobil: 45008356
Regional komité for medisinsk og helsefaglig
forskningsetikk REK vest-Norge (REK vest)
http://helseforskning.etikkom.no

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Silje Endresen Reme
Uni Helse Uni Research
Krinkelkroken 1
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Vår dato: 16.05.2014 Vår ref: 38271 / 3 / LMR Deres dato: Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 21.03.2014. All nødvendig informasjon om prosjektet forelå i sin helhet 14.05.2014. Meldingen gjelder prosjektet:

38271	*Supported Employment and preventing Early Disability (SEED)*
Behandlingsansvarlig	*Uni Research AS, ved institusjonens øverste leder*
Daglig ansvarlig	*Silje Endresen Reme*

Personvernombudet har vurdert prosjektet, og finner at behandlingen av personopplysninger vil være regulert av § 7-27 i personopplysningsforskriften. Personvernombudet tilrår at prosjektet gjennomføres.

Personvernombudets tilråding forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, http://www.nsd.uib.no/personvern/meldeplikt/skjema.html. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, http://pvo.nsd.no/prosjekt.

Personvernombudet vil ved prosjektets avslutning, 01.12.2025, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Katrine Utaaker Segadal

Linn-Merethe Rød

Kontaktperson: Linn-Merethe Rød tlf: 55 58 89 11
Vedlegg: Prosjektvurdering

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

Prosjektvurdering - Kommentar

Prosjektnr: 38271

SEED-studien er en randomisert kontrollert studie der målet er å evaluere to ulike tiltak som tilbys av NAV for å forebygge uførhet og øke arbeidsdeltakelse blant unge som står i fare for å falle ut av arbeidslivet. Deltakerne fordeles tilfeldig til de to ulike arbeidsrettede tiltakene: Arbeidspraksis i skjermet virksomhet (APS) eller Supported Employment (SE).

SEED-studien vil bidra med ny kunnskap om effekten som de ulike tiltakene har med tanke på:
- Sykefravær, mottak av stønad og uføretrygd (registerdata)
- Fysisk og psykisk helse, funksjon og mestring (spørreskjemadata)
- Kostnadseffektivitet av tiltakene (kost/nytte-analyse).

Utvalget består av 200-400 personer mellom 18-29 år som faller innunder NAV-lovens § 14a med behov for spesielt tilpasset innsats. Førstegangskontakt foretas via saksbehandler i NAV, som videreformidler informasjon om prosjektet med invitasjon til allmøter i regi av Uni Helse i samarbeid med NAV. Informasjonsskrivet av 06.05.14 er godt utformet.

Data samles inn via standardiserte og validerte spørreskjema om livsstil, funksjon, symptomer og helsetilstand. Deltakelse innebærer å fylle ut spørreskjema før oppstart av tiltak, samt etter 6 og 12 måneder. I tillegg innhentes det samtykke til at registerdata for årene 2011-2021 kan innhentes om den enkelte. Følgende registerdata inngår:

- Alder og kjønn
- Bruk av økonomisk sosialhjelp
- forløpsdata for utdanning (type, start- og eventuelt sluttdato, høyeste oppnådde nivå)
- forløpsdata for arbeidsforhold (start- og evt. sluttdato, næringskode)
- forløpsdata om sykefravær (start- og evt. sluttdato, diagnose, prosentandel)
- forløpsdata for tiltak og ytelser (start- og evt. sluttdato for dagpenger, arbeidsavklaringspenger, beløp)
- forløpsdata for uføretrygd (start- og evt. sluttdato, uføregrad)
- årlig pensjonsgivende inntekt

Ombudet anser at konfidensialitet og frivillighetsaspekt er ivaretatt på en god måte. Hvorvidt man deltar i eller trekker seg fra studien, får ingen konsekvenser i forhold til deltakelsen i tiltakene og oppfølgingen fra NAV. Den enkeltes besvarelse vil heller ikke være tilgjengelig for ansatte i NAV.

Fremgangsmåten rundt informasjonssikkerhet er som følger:
Forskergruppen mottar navn og personnummer fra NAV på dem som har samtykket til deltakelse i studien. Øvrige kontaktopplysninger (adresse, e-post adresse, evt. mobilnummer) innhentes direkte fra deltakerne. Koblingsnøkkelen for registerdata oppbevares hos SSB, mens den opprinnelige koblingsnøkkelen for spørreskjemadata før kobling med registerdata oppbevares i brannsikkert skap med tallkode hos Uni Research.

Uni Research sletter sin koblingsnøkkel så snart skjemadata er ferdig innsamlet. Behandling og oppbevaring av data skjer i avidentifisert form, på sikker server, jf. telefonsamtale med prosjektleder av 14.05.14.

Ved oversendelse av data må det i tillegg benyttes anerkjente krypteringsstandarder. Personvernombudet legger til grunn at forsker etterfølger Uni Research sine interne rutiner for datasikkerhet. Det er kun autorisert personell knyttet til prosjektet som har adgang til datamaterialet, og alle personer som er tilknyttet prosjektet har taushetsplikt.

Spørreskjema fylles ut enten i papirformat eller elektronisk. Qualtrics er databehandler for prosjektet. Uni Research AS skal inngå skriftlig avtale med Qualtrics om hvordan personopplysninger skal behandles, jf. personopplysningsloven § 15.For råd om hva databehandleravtalen bør inneholde, se Datatilsynets veileder: http://www.datatilsynet.no/Sikkerhet-internkontroll/Databehandleravtale/.

Forventet prosjektslutt er 01.12.2025. Ifølge prosjektmeldingen skal innsamlede opplysninger da anonymiseres. Anonymisering innebærer å bearbeide datamaterialet slik at ingen enkeltpersoner kan gjenkjennes. Det gjøres ved å:
- slette direkte personopplysninger (som navn/koblingsnøkkel)
- slette/omskrive indirekte personopplysninger (identifiserende sammenstilling av bakgrunnsopplysninger som f.eks. bosted/arbeidssted, alder og kjønn)

Vi gjør oppmerksom på at også databehandler må slette personopplysninger tilknyttet prosjektet i sine systemer. Dette inkluderer eventuelle logger og koblinger mellom IP-/epostadresser og besvarelser.

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Forespørsel om deltakelse i forskningsprosjektet SEED

Bakgrunn og hensikt

Dette er en forespørsel til deg om å delta i SEED-studien, der hensikten er å sammenlikne to arbeidsrettede tiltak for å få bedre kunnskap om hva som kan hjelpe unge mennesker å komme i arbeid og hindre utstøting fra arbeidslivet. Prosjektet drives av Uni Helse, og er finansiert av Norges Forskningsråd. Ansvarlig for prosjektet er prosjektlederne dr. Silje E. Reme og dr. Torill H. Tveito.

Hva innebærer studien?

Dersom du velger å delta i forskningsprosjektet, vil du bli bedt om å svare på en del spørsmål om bl.a. fysisk og psykisk helse og funksjonsevne. Hvis du ønsker det, vil du få hjelp og assistanse til utfyllingen av spørreskjemaet. Deretter vil du bli tilfeldig trukket til en av to grupper som vil motta ulike arbeidsrettede tiltak: Gruppe 1 får oppfølging med tiltaket *«Arbeidspraksis i skjermet virksomhet» (APS)*, som innebærer arbeidstrening og kvalifisering med oppfølging med mål om å skaffe arbeid. Gruppe 2 får oppfølging med tiltaket individuell jobbstøtte ved bruk av metoden «*Supported Employment» (SE)*, som innebærer aktivt jobbsøk og hjelp til å finne arbeid. Hvilken gruppe du blir trukket ut til er helt tilfeldig og det er ingen, hverken du selv eller noen du møter i prosjektet, som kan påvirke eller som på forhånd vet utfallet av trekningen.

Opplysninger fra offentlige registre

Vi ønsker å bruke informasjonen du har gitt oss i spørreskjemaet sammen med informasjon fra offentlige registre, og vi ber deg derfor om tillatelse til å hente informasjon om yrkesaktivitet og inntekt, sykefravær og diagnose, tiltak, trygder og stønader som du mottar fra NAV, og økonomisk sosialhjelp og utdanning fra Statistisk Sentralbyrå (SSB) fra perioden 2011-2021. Vi vil også hente inn informasjon om hvilke tiltak du får under prosjektperioden, oppfølging og oppmøte. Formålet med disse opplysningene er å undersøke om tilbudet du får har effekt på arbeidslivsdeltakelse og helse.

Hva skjer med informasjonen om deg?

Informasjonen som registreres om deg vil kun brukes slik som beskrevet i dette brevet. Som deltaker i prosjektet vil du få tildelt en individuell nummerkode. Denne koden vil knytte deg til dine personlig gjenkjennende opplysninger (navn, personnummer og kontaktinformasjon) gjennom en liste som oppbevares i låsbart og brannsikkert skap. All annen informasjon som samles inn om deg vil ikke bli behandlet sammen med disse personlige opplysningene, og det er kun en liten gruppe forskere som har adgang til denne listen. Verken NAV eller noen andre utenforstående kan finne ut hva den enkelte har svart. I tillegg har alle personer som er knyttet til prosjektet (for eksempel saksbehandler og andre ansatte ved NAV, behandlere, forskere, teknisk personale og kontorpersonale) taushetsplikt.

Innen utgangen av 2025 vil datamaterialet bli anonymisert ved at verken direkte eller indirekte personidentifiserbare opplysninger fremgår, og navneliste og koblingsnøkler med individuelle nummerkoder vil bli slettet. Anonymiseringen innebærer videre at spørreskjema makuleres. Det vil ikke være mulig å identifisere deg i resultatene av studien når disse publiseres.

Mulige fordeler eller ulemper
Deltakelse i prosjektet omfatter ingen risiko for din helse. Det innebærer ingen kostnad for deg å delta.

Frivillig deltakelse
Det er viktig å understreke at denne studien som utføres av Uni Helse, er adskilt fra tiltaket som tilbys fra NAV. Det vil si at mens NAV stiller krav til deltakelse i tiltaket, så er det frivillig å delta i selve studien. Du kan når som helst og uten å oppgi noen grunn trekke tilbake ditt samtykke til å delta i selve studien. Dette vil ikke få konsekvenser for den vanlige oppfølgingen du får av NAV, din fastlege eller andre behandlere. Dersom du trekker deg har du rett til å be om at opplysningene som er samlet inn fra deg slettes fra prosjektet. Krav om dette må fremsettes før data er analysert.

Dersom du ønsker å delta, undertegner du samtykkeerklæringen på siste side. Dersom du senere ønsker å trekke deg eller har spørsmål til studien, kan du kontakte prosjektkoordinator Vigdis Sveinsdottir på e-post: seed@uni.no eller ringe prosjekttelefonen: 55 58 99 59.

Ytterligere informasjon om studien finnes i kapittel A

Ytterligere informasjon om personvern, økonomi og forsikring finnes i kapittel B

Samtykkeerklæring følger etter kapittel B.

Kapittel A- forklaring av hva studien innebærer:

For å delta i studien må du som deltaker ha et ønske om å komme i jobb og kunne norsk godt nok til å forstå og svare på et spørreskjema på norsk. Du velger om du vil bli med i studien etter å ha deltatt på et møte der du får informasjon om hva det vil bety for deg å være med. Sier du ja til å delta, blir du trukket ut til å motta ett av to tilbud: enten et arbeidsrettet tiltak i tråd med dine ønsker ved en attføringsbedrift, eller personlig jobbstøtte fra en jobbkonsulent. Det er helt tilfeldig hvilket tiltak du får, det er ingen som kan påvirke dette.

Gruppe 1 – Tilbud om arbeidsrettet tiltak i attføringsbedrift
Blir du trukket ut til denne gruppen, vil du motta oppfølging med tiltaket ”Arbeidspraksis i skjermet virksomhet” (APS) i en attføringsbedrift. I dette tiltaket kan du for eksempel få prøve deg innen catering, kantine, barnehage, bilverksted, møbelverksted, interiøravdeling, transport, klesvask, sveising og lagerarbeid. Du vil få aktiv oppfølging av rådgivere og arbeidsledere ved de ulike bedriftene. Du vil få anledning til å prøve ut arbeidsevnen din i et skjermet miljø, gjennom arbeid som er tilpasset det du kan og utfordringene dine. Dette styrker mulighetene dine til å skaffe deg vanlig lønnet arbeid.

Gruppe 2 – Tilbud om personlig jobbstøtte
Blir du trukket ut til denne gruppen får du tett oppfølging av en jobbkonsulent som har fått opplæring i en metode som kalles Supported Employment - personlig jobbstøtte. Denne metoden er utviklet for å hjelpe folk med helseplager eller andre utfordringer til å delta i det vanlige arbeidslivet. Tiltaket har fokus på at du skal få arbeide i en jobb du ønsker basert på dine interesser og ferdigheter. Du blir ansatt på en vanlig arbeidsplass, uten langvarig opptrening på forhånd. Jobbsøking starter så fort som mulig og senest innen 1 måned. Dette tiltaket innebærer aktivt arbeid for å skaffe deg en jobb. Du vil få støtte fra jobbkonsulenten din også etter at du er ansatt.

Som deltaker i prosjektet vil du bli bedt om å fylle ut totalt 3 spørreskjema: ved start, samt 6 og 12 måneder etterpå.

Kapittel B - Personvern, økonomi og forsikring:

Personvern
Opplysningene som registreres om deg er først og fremst basert på den informasjonen som du selv velger å fylle ut i spørreskjema. Heftet med spørreskjema er satt sammen av utprøvde og standardiserte skjema, og i tillegg ønsker vi å hente opplysninger fra offentlige registre slik som beskrevet på første side. For å være sikre på at informasjonen fra de 3 spørreskjemaene dine blir koblet til riktig person og at informasjonen vi henter fra registrene virkelig gjelder deg, vil vi bruke personnummeret ditt (11 siffer). Vi vil ikke bruke personnummeret til noe annet, og vi vil slette listen med kobling til alle personlig gjenkjennende opplysninger når datasamlingen er ferdig og data er analysert (senest ved prosjektslutt i 2025). Kobling av informasjon tilbake til deg etter at disse opplysningene er slettet blir altså ikke mulig.

Uni Helse, ved prosjektlederne Silje E. Reme og Torill H. Tveito er databehandlingsansvarlige.

Rett til innsyn og sletting av opplysninger om deg
Hvis du takker ja til å delta i studien, har du rett til å få innsyn i hvilke opplysninger som er registrert om deg. Du har videre rett til å få korrigert eventuelle feil i de opplysningene vi har

registrert. Dersom du trekker deg fra studien, kan du kreve å få slettet innsamlede opplysninger, med mindre opplysningene allerede er inngått i analyser eller brukt i vitenskapelige publikasjoner.

Økonomi og Forskningsrådets rolle

Dette prosjektet har som hovedfokus å undersøke om, og i så fall hvilken, effekt de to ulike arbeidsrettede tiltakene har for målgruppen. Studien er finansiert gjennom forskningsmidler fra Norges Forskningsråd (NFR), program for Sykefravær, arbeid og helse. Uni Helse er en uavhengig og selvstendig aktør i forhold til NFR.

Forsikring

Alle deltakere i prosjektet vil få tilbud om oppfølging gjennom to ulike arbeidsrettede tiltak, som til enhver tid følger det gjeldende regelverk og oppfyller det man har krav på av oppfølging fra NAV. Vi regner ikke at dette prosjektet innebærer noen risiko for de personene som deltar.

Informasjon om utfallet av studien

Du har til enhver tid rett til å trekke deg fra deltakelse i studien. Du kan også be om informasjon om utfallet av studien når denne informasjonen er publisert. Informasjon om utfall av studien vil ikke kunne identifisere enkeltpersoner, men vil kun vise hovedtendenser basert på generelle kjennetegn, slik som kjønn, alder og informasjon basert på de innsamlede data.

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organisasjonsnummer 985 827 117 mva

Samtykke til deltakelse i studien:

Jeg er villig til å delta i SEED-studien, og godtar innhenting av opplysninger fra offentlige registre (slik som beskrevet på første side)

(Signert av prosjektdeltaker, dato)

Jeg bekrefter å ha gitt informasjon om SEED-studien

(Signert, rolle i studien, dato)

Dersom deltaker ønsker å beholde informasjonsskrivet
kan denne siden adskilles fra de foregående sidene.

ID. NR:

Spørreskjema
om
arbeid og helse

uni Research

SEED-studien:
«Supported Employment and Preventing Early Disability»

Hensikten med dette forskningsprosjektet er å få kunnskap om ulike tiltak for å forebygge uførhet og øke arbeidsdeltakelse blant unge mellom 18-29 år. Prosjektet er finansiert av Norges Forskningsråd, og drives av forskere ved Uni Research Helse. Ansvarlig for prosjektet er prosjektlederne Silje E. Reme og Torill H. Tveito.

For å avgjøre om tiltakene som undersøkes virker, er det nødvendig å spørre ganske grundig om hvordan du har det nå før oppfølgingen igangsettes. Vi ber deg bl.a. om å svare på spørsmål om fysisk og psykisk helse, utdanning, arbeidsevne og funksjon. Du vil bli bedt om å fylle ut et mindre spørreskjema om 6 og 12 måneder.

Det er mange spørsmål i skjemaet, og det er ingen riktige eller gale svar. Les spørsmålene nøye og forsøk å beskrive det som passer best for deg. Bruk magefølelsen og svar det som umiddelbart virker som det riktige svaret for deg. Noen spørsmål ligner på hverandre. Årsaken til dette er at spørreskjemaet er sammensatt av flere standardiserte spørreskjema som brukes i forskning internasjonalt og ikke kan endres på. Det er derfor viktig at du besvarer alle spørsmålene.

Det utfylte skjemaet er konfidensielt, og vil ikke bli lest av NAV eller andre utenforstående. Resultatene vil ikke bli presentert på en måte som gjør det mulig å identifisere den enkelte svargiver. Alle vi som er knyttet til prosjektet har taushetsplikt.

Dersom du har spørsmål om prosjektet, ta gjerne kontakt med oss.

På forhånd tusen takk for hjelpen!

Prosjektleder I:	**Prosjektleder II:**	**Prosjektkoordinator:**
Silje E. Reme	Torill H. Tveito	Vigdis Sveinsdottir
Silje.Reme@uni.no	Torill.Tveito@uni.no	Vigdis.Sveinsdottir@uni.no
908 65 267	918 06 809	55 58 99 59

Uni Research Helse, Postboks 7810, 5020 Bergen
Prosjekttelefon: 55 58 99 59
Prosjekt e-post: seed@uni.no

Spørreskjema: Del 1

Si fra dersom du ønsker hjelp til å fylle ut skjema.

1. **Kjønn**
   ☐$_1$ Mann ☐$_2$ Kvinne

2. **Fødselsår:** 19______

3. **Har du lese- og/eller skrivevansker?**
   ☐$_1$ Ja ☐$_2$ Nei

4. **Hvordan foretrekker du å motta spørreskjemaene ved 6- og 12-måneders oppfølging?**
   ☐$_1$ I papirform
   ☐$_2$ I elektronisk form, på følgende e-postadresse (vennligst skriv tydelig):
   ____

5. **Sivilstand**
   ☐$_1$ Singel
   ☐$_2$ Kjæreste (men bor ikke sammen)
   ☐$_3$ Samboer
   ☐$_4$ Gift/partnerskap

6. **Boforhold**
   ☐$_1$ Bor for deg selv
   ☐$_2$ Bor i kollektiv/hybel sammen med andre
   ☐$_3$ Bor sammen med venn
   ☐$_4$ Bor sammen med kjæreste/ektefelle/partner
   ☐$_5$ Bor hos mor og/eller far
   ☐$_6$ Annet, spesifiser: ________________________________

7. **Barn**
   a) **Hvor mange barn har du?** __________
   b) **Dersom du har barn, hvor mange barn bor hos deg nå/er i husholdningen?**
   Antall 0-3 år: _____ 4-7 år: _____ 8-16 år: _____ Over 16 år: _____

8. **Ditt fødeland:** ________________

   Mors fødeland: _______________

   Fars fødeland: ________________

9. **Har du førerkort?**
   ☐$_1$ Ja ☐$_2$ Nei

10. Hva slags utdanning har du? *(Sett kryss ved den høyeste utdannelsen du har)*

☐$_1$Grunnskolenivå (Barne- og ungdomsskole)
☐$_2$ Videregående skole
☐$_3$ Universitet/høgskole 1-4 år
☐$_4$ Universitet/høgskole mer enn 4 år
☐$_5$ Annet, spesifiser: ________________________________

ARBEID

11. Har du tidligere deltatt i arbeidsrettede tiltak i regi av NAV?

☐$_1$ Ja ☐$_2$ Nei

Hvis ja, hvilke?

Tiltak: _____________________________________ Periode_________________________
Tiltak: _____________________________________ Periode_________________________
Tiltak: _____________________________________ Periode_________________________
Tiltak: _____________________________________ Periode_________________________

12. Hva er de <u>viktigste</u> årsakene til at du ikke er i arbeid?

☐$_1$ Psykiske plager
☐$_2$ Arbeidskonflikt
☐$_3$ Andre helseplager
☐$_4$ Belastninger i hjemmesituasjonen
☐$_5$ Annet: ________________________________

13. Yrke

a) **Har du tidligere vært i arbeid?** ☐$_1$ Ja ☐$_2$ Nei *(Dersom nei, gå til punkt 14)*
b) **Hva er/var ditt hovedyrke:** _____________________________________
c) **Antall år i yrket**_________ **stillingsprosent**:______ %
d) **Type bedrift:** ____
e) **Har du privat uføreforsikring?** ☐$_1$ Ja ☐$_2$ Nei

BEHANDLING

14. Har du fått behandling/oppfølging av helsepersonell i løpet av <u>de siste 6 månedene</u>?

☐$_1$ Fastlege/bedriftslege antall konsultasjoner: _____
☐$_2$ Distriktspsykiatrisk senter antall konsultasjoner: _____
☐$_3$ Psykolog antall konsultasjoner: _____
☐$_4$ Fysio-/manuellterapeut antall konsultasjoner: _____
☐$_5$ Kiropraktor antall konsultasjoner: _____
☐$_6$ Alternativ behandling (f. eks. homeopati, akupunktur) antall konsultasjoner: _____
☐$_7$ Annet, spesifiser: ______________________________ antall konsultasjoner: _____

Hva er du mest fornøyd med av behandlingen/oppfølgingen du har fått?

……

……

Hva er du minst fornøyd med av behandlingen/oppfølgingen du har fått?

……

……

EGENVURDERINGER

15. a) Hvis du begynner i arbeid, hvilken effekt vil det ha på dine plager?

☐$_1$Forverre tilstanden
☐$_2$ Forsinke helbredelsen
☐$_3$ Ikke noen effekt
☐$_4$ Litt gunstig effekt
☐$_5$ Svært gunstig effekt

b) Ta standpunkt til denne påstanden:

(Sett kryss)	Passer svært godt	Passer godt	Passer verken godt eller dårlig	Passer dårlig	Passer svært dårlig
Jeg regner med å være i jobb i løpet av noen uker	☐$_1$	☐$_2$	☐$_3$	☐$_4$	☐$_5$

SØVN

16. a) Hvor mange ganger i uken har du vanskeligheter med å sovne?

☐$_0$ ☐$_1$ ☐$_2$ ☐$_3$ ☐$_4$ ☐$_5$ ☐$_6$ ☐$_7$

Hvor mange ganger i uken har du nattlige oppvåkninger?

☐$_0$ ☐$_1$ ☐$_2$ ☐$_3$ ☐$_4$ ☐$_5$ ☐$_6$ ☐$_7$

Hvor mange ganger i uken våkner du tidlig på morgenen og har vanskeligheter med å få sove igjen?

☐$_0$ ☐$_1$ ☐$_2$ ☐$_3$ ☐$_4$ ☐$_5$ ☐$_6$ ☐$_7$

(Dersom du ikke har hatt noen av disse søvnvanskene, gå til punkt 17)

b) Hvor lenge har disse søvnvanskene vart?

☐$_1$ Mindre enn 1 måned ☐$_2$ 1-3 måneder ☐$_3$ Over 3 måneder

c) Hvor mange ganger i uken går søvnvanskene ut over privatliv eller jobb/skole?

☐$_0$ ☐$_1$ ☐$_2$ ☐$_3$ ☐$_4$ ☐$_5$ ☐$_6$ ☐$_7$

MOBBING

Vi sier at en person blir mobbet når en eller flere andre sier eller gjør vonde og ubehagelige ting mot denne personen. Ved mobbing skjer disse tingene vanligvis gjentatte ganger, og den som blir utsatt kan ha vanskelig for å forsvare seg. Det er også mobbing når en person med hensikt blir stengt ute fra venneflokken, eller når andre forteller løgner eller sprer falske rykter om ham eller henne. Om en person gjentatte ganger blir ertet på en ubehagelig og sårende måte, er dette også mobbing. Men det er ikke mobbing når noen blir ertet på en snill og vennskapelig måte, eller når to omtrent like sterke (jevnbyrdige) personer slåss eller krangler.

17. Tenk tilbake på <u>skoletiden din</u>:

a) Hvor ofte ble du mobbet av en eller flere andre elever?

☐$_1$ Aldri eller nesten aldri
☐$_2$ I en kort periode (noen uker)
☐$_3$ I flere korte perioder
☐$_4$ I en lang periode (over flere måneder)
☐$_5$ I flere lengre perioder av min skoletid

b) Hvor ofte var du selv med på å mobbe en eller flere andre elever?

☐$_1$ Aldri eller nesten aldri
☐$_2$ I en kort periode (noen uker)
☐$_3$ I flere korte perioder
☐$_4$ I en lang periode (over flere måneder)
☐$_5$ I flere lengre perioder av min skoletid

c) Hvor ofte ble du mobbet av en eller flere lærere?

☐$_1$ Aldri eller nesten aldri
☐$_2$ I en kort periode (noen uker)
☐$_3$ I flere korte perioder
☐$_4$ I en lang periode (over flere måneder)
☐$_5$ I flere lengre perioder av min skoletid

18. Tenk tilbake på <u>tidligere arbeidsplasser</u>: *(Dersom du aldri har vært i jobb, gå til punkt 19)*

a) Hvor ofte ble du mobbet av en eller flere kolleger?

☐$_1$ Aldri eller nesten aldri
☐$_2$ I en kort periode (noen uker)
☐$_3$ I flere korte perioder
☐$_4$ I en lang periode (over flere måneder)
☐$_5$ I flere lengre perioder av min tid i arbeidslivet

b) Hvor ofte ble du mobbet av en eller flere ledere?

☐$_1$ Aldri eller nesten aldri
☐$_2$ I en kort periode (noen uker)
☐$_3$ I flere korte perioder
☐$_4$ I en lang periode (over flere måneder)
☐$_5$ I flere lengre perioder av min tid i arbeidslivet

c) Hvor ofte var du selv med på å mobbe en eller flere kolleger?

☐$_1$ Aldri eller nesten aldri
☐$_2$ I en kort periode (noen uker)
☐$_3$ I flere korte perioder
☐$_4$ I en lang periode (over flere måneder)
☐$_5$ I flere lengre perioder av min tid i arbeidslivet

19. Tenk på <u>andre sosiale sammenhenger utenom skole og arbeidsliv</u> (f.eks. vennegjeng, famille og idrettslag):

a) Hvor ofte er du blitt mobbet i sosiale sammenhenger utenom skole og arbeidsliv?

☐$_1$ Aldri eller nesten aldri
☐$_2$ I en kort periode (noen uker)
☐$_3$ I flere korte perioder
☐$_4$ I en lang periode (over flere måneder)
☐$_5$ I flere lengre perioder av mitt liv utenom skole og arbeidsliv

b) Hvor ofte har du selv vært med på å mobbe andre i sosiale sammenhenger utenom skole og arbeidsliv?

☐$_1$ Aldri eller nesten aldri
☐$_2$ I en kort periode (noen uker)
☐$_3$ I flere korte perioder
☐$_4$ I en lang periode (over flere måneder)
☐$_5$ I flere lengre perioder av mitt liv utenom skole og arbeidsliv

20. Tenk på <u>alle de ulike arenaene nevnt ovenfor</u> (både skole, eventuelt arbeid og andre sosiale sammenhenger)

a) Har du selv vært utsatt for mobbing i løpet av <u>de siste 6 månedene</u>?

☐$_1$ Ikke i det hele tatt *(gå til punkt 20c)*
☐$_2$ En sjelden gang
☐$_3$ 2 eller 3 ganger i måneden
☐$_4$ Omtrent en gang i uken
☐$_5$ Flere ganger pr. uke

b) Over hvor lang periode har mobbingen foregått?

☐$_1$ Kun noen uker
☐$_2$ Noen måneder
☐$_3$ Mellom 6 mnd. og 1 år
☐$_4$ Mellom 1 og 2 år
☐$_5$ Mer enn 2 år

c) Har du selv vært med på å mobbe andre i løpet av <u>de siste 6 månedene</u>?

☐$_1$ Ikke i det hele tatt *(gå til punkt 21)*
☐$_2$ En sjelden gang
☐$_3$ 2 eller 3 ganger i måneden
☐$_4$ Omtrent en gang i uken
☐$_5$ Flere ganger i uken

d) Over hvor lang periode har mobbingen av andre foregått?

☐$_1$ Kun noen uker
☐$_2$ Noen måneder
☐$_3$ Mellom 6 mnd. og 1 år
☐$_4$ Mellom 1 og 2 år
☐$_5$ Mer enn 2 år

VOLD

21. a) Har du på noe tidspunkt vært påført vold av en eller flere andre personer?
(Uhell og vanlige barneslagsmål regnes ikke med)

☐$_1$ Ja ☐$_2$ Nei *(Hvis nei, gå til punkt 22)*

b) I tilfelle vold, hva slags vold har du vært utsatt for?

☐$_1$ Blitt slått
☐$_2$ Ran/Overfall
☐$_3$ Seksuell vold eller overgrep
☐$_4$ Frihetsberøvelse
☐$_5$ Alvorlige trusler
☐$_6$ Annen form for vold: ____

c) I tilfelle du har vært utsatt for vold, hvor ofte har dette skjedd?

☐$_1$ En enkelt hendelse
☐$_2$ Flere enkelthendelser
☐$_3$ Regelmessig i 1 – 12 måneder
☐$_4$ Regelmessig i over ett år

ALKOHOL, RUS OG LEGEMIDLER

22. Alkohol

a) Hvor ofte drikker du alkohol?

☐$_1$ Aldri *(Hvis aldri, gå til punkt 23)*
☐$_2$ Månedlig eller sjeldnere
☐$_3$ To til fire ganger i måneden
☐$_4$ To til tre ganger i uken
☐$_5$ Fire ganger i uken eller mer

b) Hvor mange alkoholenheter (en drink, et glass vin eller 1 liten flaske pilsnerøl) tar du på en "typisk" drikkedag?

☐$_1$ 1-2
☐$_2$ 3-4
☐$_3$ 5-6
☐$_4$ 7-9
☐$_5$ 10 eller flere

c) Hvor ofte drikker du seks alkoholenheter eller mer?

☐$_1$ Aldri
☐$_2$ Sjelden
☐$_3$ Noen ganger i måneden
☐$_4$ Noen ganger i uken
☐$_5$ Nesten daglig

d) Når du drikker, drikker du da vanligvis (sett ett eller flere kryss)

☐$_1$ Øl eller cider
☐$_2$ Vin
☐$_3$ Brennevin

23. Rusmidler

Her er noen spørsmål om narkotiske stoffer og legemidler (rusmidler). Vi er takknemlige om du svarer så grundig og ærlig som mulig ved å markere det alternativ som gjelder for deg.

1. Hvor ofte bruker du andre rusmidler enn alkohol?
(Se liste over narkotiske stoffer og legemidler på side 11)

Aldri *(Hvis aldri, gå til punkt 24)*	1 gang i måneden eller sjeldnere	2-4 ganger i måneden	2-3 ganger i uken	4 ganger i uken eller mer
☐$_1$	☐$_2$	☐$_3$	☐$_4$	☐$_5$

2. Bruker du flere enn ett rusmiddel ved ett og samme tilfelle?

Aldri	1 gang i måneden eller sjeldnere	2-4 ganger i måneden	2-3 ganger i uken	4 ganger i uken eller mer
☐$_1$	☐$_2$	☐$_3$	☐$_4$	☐$_5$

3. Hvor mange ganger i løpet av en typisk dag tar du stoff/legemidler, når du tar rusmidler?

0	1-2	3-4	5-6	7 eller flere
☐$_1$	☐$_2$	☐$_3$	☐$_4$	☐$_5$

4. Hvor ofte blir du kraftig påvirket av rusmidler?

Aldri	Sjeldnere enn en gang i måneden	Hver måned	Hver uke	Daglig eller nesten hver dag
☐$_1$	☐$_2$	☐$_3$	☐$_4$	☐$_5$

5. Har du det siste året opplevd at lengselen etter rusmidler har vært så sterk at du ikke kunne stå imot?

Aldri	Sjeldnere enn en gang i måneden	Hver måned	Hver uke	Daglig eller nesten hver dag
☐$_1$	☐$_2$	☐$_3$	☐$_4$	☐$_5$

6. Har det hendt at du i løpet av det siste året ikke kunne slutte å ta rusmidler når du først hadde begynt?

Aldri	Sjeldnere enn en gang i måneden	Hver måned	Hver uke	Daglig eller nesten hver dag
☐$_1$	☐$_2$	☐$_3$	☐$_4$	☐$_5$

7. Hvor ofte i løpet av det siste året har du tatt rusmidler og så latt være å gjøre noe som du burde ha gjort?

Aldri	Sjeldnere enn en gang i måneden	Hver måned	Hver uke	Daglig eller nesten hver dag
☐$_1$	☐$_2$	☐$_3$	☐$_4$	☐$_5$

8. Hvor ofte i løpet av det siste året har du hatt behov for å starte dagen med å ta rusmidler etter stort inntak dagen før?

Aldri	Sjeldnere enn en gang i måneden	Hver måned	Hver uke	Daglig eller nesten hver dag
☐$_1$	☐$_2$	☐$_3$	☐$_4$	☐$_5$

9. Hvor ofte i løpet av det siste året har du hatt skyldfølelse eller dårlig samvittighet fordi du har brukt rusmidler?

Aldri	Sjeldnere enn en gang i måneden	Hver måned	Hver uke	Daglig eller nesten hver dag
☐$_1$	☐$_2$	☐$_3$	☐$_4$	☐$_5$

10. Har du eller noen andre blitt skadet (psykisk eller fysisk) på grunn av din bruk av rusmidler?

Nei	Ja, men ikke i løpet av det siste året	Ja, i løpet av det siste året
☐$_1$	☐$_2$	☐$_3$

11. Har en slektning eller venn, lege eller sykepleier, eller noen andre vært urolige for din bruk av rusmidler, eller sagt til deg at du burde slutte med rusmidler?

Nei	Ja, men ikke i løpet av det siste året	Ja, i løpet av det siste året
☐1	☐2	☐3

LISTE OVER NARKOTISKE STOFFER (OBS. IKKE ALKOHOL)

Cannabis	**Amfetamin, sentralstim.**	**Kokain**	**Opiater**	**Hallusinogener**	**Løsemidler**	**GHB og øvrige**
Cannabis Cannabisolje Hasj Marihuana	Amfetamin Betelnøtt Concerta Dexamin Equasym Fenmetralin Khat Metamfetamin Metylfenidat Modafinil Modiodal Ritalin	Crack Freebase Kokablad Kokain Kokainbase Kokapasta	Heroin Opium Røyke-heroin	2C-B, DOB DMT (mimosa) Ecstacy (MDMA) Fleinsopp Ketalar/Ketamin LSD Magic mushrooms Meksikansk sopp Meskalin/Peyote Muscat PCP Piggeple Psilocybin	Bensin Gass Lim Løsemidler Trikloretylen Tynner	Amylniritt (poppers) Anabole steroider Antikolinergika (Disipal, Akineton) GHB, GBL Lystgass

LEGEMIDLER

Legemidler regnes som rusmiddel når du tar det:

- Mer eller oftere enn legen har foreskrevet
- For å ha det moro, føle deg bra, bli «høy», eller prøve ut effekten av dem
- Og har fått det av en slektning eller venn
- Og har kjøpt det «svart» eller stjålet det

Tabletter regnes IKKE som rusmiddel når de er foreskrevet av lege og du tar dem slik legen sier at du skal (både mengde og hyppighet).

Beroligende legemidler og/eller sovetabletter

Alopam
Aprazolam
Apodorm
Ativan
Barbital
Diazepam
Dormicum
Fenemal
Fenobarbital
Flunitrazepam
Flunipam
Heminevrin
Imovane
Karisoprodol
Klometiazol
Klonazepam
Lorazepam
Midazolam
Mogadon
Nitrazepam
Oxazepam
Rivotril
Rohypnol
Sobril
Somadril
Stesolid
Stilnoct
Valium
Vival
Xanor
Xanor dep.
Zolpidem
Zopiclone
Zopiklon

Smertestillende legemidler

Actiq
Anervan
Aporex
Apotekets sterke hostesirup
Buprenorfin
Cosylan
Dekstropropoksyfen
Dolcontin
Durogesic
Etylmorfin
Fentanyl
Fortralin
Hydrokon
Hydromorfonklorid
Kapanol
Ketalar
Ketamin
Ketobemidon
Ketogan
Ketorax
Kodein
Leptanal
Matrifen
Meprobamat
Metadon
Morfin
Morfinscopolamin
Nobligan
Norspan
Oksykodon
OxyContin
OxyNorm
Pallodon
Paralgin
Paralgin forte /major/minor
Petidin
Pinex
Pinex forte /major
Solvipect Comp
Suboxone
Subutex
Temgesic
Tramadol
Tramagetic

24. Bruker du medisiner?

☐1 Ja, daglig
☐2 Ja, ved behov
☐3 Nei

Hvilke medisiner bruker du?

Medikament: ____ Antall mg: ________________
Medikament: ____ Antall mg: ________________
Medikament: ____ Antall mg: ________________
Medikament: ____ Antall mg: ________________
Medikament: ____ Antall mg: ________________
Medikament: ____ Antall mg: ________________
Medikament: ____ Antall mg: ________________
Medikament: ____ Antall mg: ________________
Medikament: ____ Antall mg: ________________
Medikament: ____ Antall mg: ________________

Du er nå ferdig med første del av spørreskjemaet.
Ta gjerne ta en pause dersom du ønsker det.
Del 2 starter på neste side:

Spørreskjema: Del 2

25. Helseproblemer siste 30 døgn

Nedenfor nevnes noen vanlige helseplager. Vi vil be deg om å vurdere hvert enkelt problem/symptom, og oppgi **i hvilken grad du har vært plaget** av dette i løpet av de siste tretti døgn, og **antall dager** du har vært plaget.

Eksempel
Hvis du føler at du har vært *en del* plaget med forkjølelse/influensa siste måned, og varigheten av plagene var *ca. en uke*, fylles dette ut på følgende måte:

Sett ring rundt tallet som passer best.

Nedenfor nevnes noen alminnelige helseproblemer	Ikke plaget	Litt plaget	Endel plaget	Alvorlig plaget	Antall dager plagene varte (omtrent)
1. Forkjølelse, influensa	0	1	[✓ 2]	3	7

NB! Det er viktig at du fyller ut både *hvor plaget* du har vært, og *omtrent antall dager* du har vært plaget siste tretti døgn.

Nedenfor nevnes noen alminnelige helseproblemer (sett ring rundt tallet som passer)		**Ikke plaget**	**Litt plaget**	**Endel plaget**	**Alvorlig plaget**	**Antall dager plagene varte (omtrent)**
1.	Forkjølelse, influensa....................	0	1	2	3	…………
2.	Hoste, bronkitt.............................	0	1	2	3	…………
3.	Astma...	0	1	2	3	…………
4.	Hodepine	0	1	2	3	…………
5.	Nakkesmerter	0	1	2	3	…………
6.	Smerter øverst i ryggen	0	1	2	3	…………
7.	Smerter i korsrygg........................	0	1	2	3	…………
8.	Smerter i armer	0	1	2	3	…………
9.	Smerter i skuldre	0	1	2	3	…………
10.	Migrene.......................................	0	1	2	3	…………
11.	Hjertebank, ekstraslag..................	0	1	2	3	…………
12.	Brystsmerter	0	1	2	3	…………
13.	Pustevansker................................	0	1	2	3	…………
14.	Smerter i føttene ved anstrengelser	0	1	2	3	…………

Nedenfor nevnes noen alminnelige helseproblemer (sett ring rundt tallet som passer)	**Ikke plaget**	**Litt plaget**	**Endel plaget**	**Alvorlig plaget**	**Antall dager plagene varte (omtrent)**
15. Sure oppstøt, ”halsbrann»	0	1	2	3	…………
16. Sug eller svie i magen	0	1	2	3	…………
17. Magekatarr, magesår	0	1	2	3	…………
18. Mageknip	0	1	2	3	…………
19. «Luftplager»................................	0	1	2	3	…………
20. Løs avføring, diaré	0	1	2	3	…………
21. Forstoppelse	0	1	2	3	………..
22. Eksem...	0	1	2	3	…………
23. Allergi	0	1	2	3	…………
24. Hetetokter	0	1	2	3	…………
25. Søvnproblemer	0	1	2	3	…………
26. Tretthet......................................	0	1	2	3	…………
27. Svimmelhet	0	1	2	3	…………
28. Angst	0	1	2	3	…………
29. Nedtrykt, depresjon.....................	0	1	2	3	…………

SHC

26. Sosial støtte

Vi er interessert i de typene av oppmuntring, assistanse og samarbeid du mottar fra den personen som er viktigst for deg når du trenger støtte til å takle problemene dine (for eksempel din lege eller behandler, en god venn eller din ektefelle/partner).

Hvert spørsmål i denne undersøkelsen beskriver en måte mennesker kan støtte deg på. Markér hvor typisk hvert utsagn er for den støtten **du** mottar. Vær snill å svare slik at vi kan se hvilke utsagn som er virkelig typiske og hvilke som ikke er så typiske for støtten du mottar. **Sett ring rundt tallet som best markerer hvor typisk utsagnet er for typen av støtte du mottar fra din støtteperson.**

Støttepersonen jeg har valgt er:

☐1 Legen min ☐2 Ektefellen/partneren min ☐3 Annet: ____________________

		Slett ikke typisk				Svært typisk
1	Viser interesse for hvordan du har det................	1	2	3	4	5
2	Løser problemer for deg	1	2	3	4	5
3	Spør om du trenger hjelp....................................	1	2	3	4	5
4	Tar seg av dine problemer	1	2	3	4	5
5	Gjør det lett for deg å snakke om alt som du synes er viktig...	1	2	3	4	5
6	Sier at du skal være stolt av deg selv	1	2	3	4	5
7	Samarbeider med deg for å få ting gjort	1	2	3	4	5
8	Presser deg til å gjøre ting	1	2	3	4	5
9	Spør deg hvordan du har det..............................	1	2	3	4	5
10	Gir deg klare råd om hvordan du skal takle problemer...	1	2	3	4	5
11	Gir deg informasjon slik at du forstår hvorfor du gjør ting	1	2	3	4	5
12	Forteller deg hva du skal gjøre............................	1	2	3	4	5
13	Er tilgjengelig for samtale når som helst	1	2	3	4	5
14	Peker på skadelige eller tåpelige måter du ser på ting på...	1	2	3	4	5

		Slett ikke typisk				Svært typisk
15	Tilbyr en rekke forslag..	1	2	3	4	5
16	Lar deg ikke dvele ved opprørende tanker..........	1	2	3	4	5

NDSS

27. Mestring av problemer og utfordringer

Nedenfor finner du eksempler på utsagn som beskriver hvilke muligheter man har når man møter problemer og utfordringer i hverdagen. Vennligst sett ring rundt tallet som passer best for deg. Det finnes ingen riktige eller gale svar.

		Stemmer helt	Stemmer ganske bra	Stemmer ikke særlig bra	Stemmer ikke i det hele tatt
1.	De aller fleste vanskelige situasjoner klarer jeg å løse med et bra resultat	1	2	3	4
2.	De viktigste sakene i livet mitt har jeg egentlig ingen kontroll over	1	2	3	4
3.	Jeg skulle ønske at jeg kunne forandre livssituasjonen min, men det går ikke	1	2	3	4
4.	Alle mine forsøk på å forandre min livssituasjon er meningsløse	1	2	3	4
5.	Det er bedre at andre forsøker å løse problemene enn at jeg skal rote det til og gjøre det verre	1	2	3	4
6.	Jeg ville nok hatt det bedre hvis jeg ikke hadde strevd sånn med å løse problemene mine	1	2	3	4
7.	Alle mine forsøk på å gjøre ting bedre gjør det egentlig bare verre	1	2	3	4

TOMCATS

28.

Utmattelse og overskudd

Vi vil gjerne vite om du har følt deg sliten, svak eller i mangel av overskudd den siste måneden. Hvis du har følt deg sliten lenge, ber vi om at du sammenligner deg med hvordan du følte deg sist du var bra. Vi ønsker at du besvarer alle spørsmålene selv om du ikke har hatt slike problemer.

(Sett ett kryss på hver linje)

Har du problemer med at du føler deg sliten?	☐ Mindre enn vanlig	☐ Ikke mer enn vanlig	☐ Mer enn vanlig	☐ Mye mer enn vanlig
Trenger du mer hvile?	☐ Nei, mindre enn vanlig	☐ Ikke mer enn vanlig	☐ Mer enn vanlig	☐ Mye mer enn vanlig
Føler du deg søvnig eller døsig?	☐ Mindre enn vanlig	☐ Ikke mer enn vanlig	☐ Mer enn vanlig	☐ Mye mer enn vanlig
Har du problemer med å komme igang med ting?	☐ Mindre enn vanlig	☐ Ikke mer enn vanlig	☐ Mer enn vanlig	☐ Mye mer enn vanlig
Mangler du overskudd?	☐ Ikke i det hele tatt	☐ Ikke mer enn vanlig	☐ Mer enn vanlig	☐ Mye mer enn vanlig
Har du redusert styrke i musklene dine?	☐ Ikke i det hele tatt	☐ Ikke mer enn vanlig	☐ Mer enn vanlig	☐ Mye mer enn vanlig
Føler du deg svak?	☐ Mindre enn vanlig	☐ Som vanlig	☐ Mer enn vanlig	☐ Mye mer enn vanlig
Har du vansker med å konsentrere deg?	☐ Mindre enn vanlig	☐ Som vanlig	☐ Mer enn vanlig	☐ Mye mer enn vanlig
Forsnakker du deg i samtaler?	☐ Mindre enn vanlig	☐ Ikke mer enn vanlig	☐ Mer enn vanlig	☐ Mye mer enn vanlig
Er det vanskeligere å finne det rette ordet?	☐ Mindre enn vanlig	☐ Ikke mer enn vanlig	☐ Mer enn vanlig	☐ Mye mer enn vanlig
Hvordan er hukommelsen din?	☐ Bedre enn vanlig	☐ Ikke verre enn vanlig	☐ Verre enn vanlig	☐ Mye verre enn vanlig

CFQ

29.

Hvordan har du det?

Når smerter og andre plager har vart en tid, blir en gjerne sliten og oppgitt. Dette gir ofte slike plager som nevnt nedenfor. Samlet blir disse her brukt som mål på at en er legemlig og psykisk presset. Vurder hvor mye hvert symptom har vært til plage eller ulempe for deg de siste 14 dagene (til og med i dag). Sett ring rundt tallet som passer best. Husk å sette en ring rundt aktuelt tall for hver plage/hvert symptom.

(sett ring rundt tallet)	Ikke i det hele tatt	Litt	En god del	Svært mye
1. Plutselig skremt uten grunn	1	2	3	4
2. Føler du deg engstelig	1	2	3	4
3. Føler du deg svimmel eller kraftløs	1	2	3	4
4. Nervøs eller urolig	1	2	3	4
5. Hjertebank	1	2	3	4
6. Skjelving	1	2	3	4
7. Føler deg anspent eller opphisset	1	2	3	4
8. Hodepine	1	2	3	4
9. Anfall av redsel eller panikk	1	2	3	4
10. Rastløshet, kan ikke sitte rolig	1	2	3	4
11. Føler deg slapp og uten energi	1	2	3	4
12. Anklager deg selv for ting	1	2	3	4
13. Har lett for å gråte	1	2	3	4
14. Tap av seksuell interesse/opplevelse	1	2	3	4
15. Dårlig appetitt	1	2	3	4
16. Vanskelig for å sove	1	2	3	4
17. Følelse av håpløshet mht. framtiden	1	2	3	4
18. Føler deg nedfor	1	2	3	4
19. Føler deg ensom	1	2	3	4
20. Har tanker om å ta ditt eget liv	1	2	3	4
21. Følelse av å være fanget	1	2	3	4
22. Bekymrer deg for mye	1	2	3	4
23. Føler ikke interesse for noe	1	2	3	4
24. Føler at alt krever stor anstrengelse	1	2	3	4
25. Føler at du ikke er noe verd	1	2	3	4

HSCL-25

30. Funksjonsvurdering

Dette spørreskjemaet handler om vanskeligheter du har på grunn av din helsetilstand. Helsetilstand omfatter sykdommer, andre kortvarige eller langvarige helseproblemer, skader, mentale eller følelsesmessige problemer, og problemer med alkohol eller narkotika.

Tenk tilbake på de siste 4 ukene, og svar på disse spørsmålene om hvor mye vanskeligheter du har hatt med å gjøre følgende aktiviteter. For hvert spørsmål, vennligst sett ring rundt kun ett svar.

I løpet av de siste 4 ukene, hvor store vanskeligheter har du hatt med:					
Å stå over lengre tid, som 30 minutter?	Ingen	Litt	En del	Store	Svært store/ klarte ikke
Å ivareta de oppgavene du har ansvar for i husholdningen?	Ingen	Litt	En del	Store	Svært store/ klarte ikke
Å lære noe nytt, f.eks. hvordan å komme fram til et nytt sted?	Ingen	Litt	En del	Store	Svært store/ klarte ikke
Hvor store problemer har du hatt med å delta i aktiviteter i lokalsamfunnet (f.eks. på festlige tilstelninger eller andre aktiviteter)?	Ingen	Litt	En del	Store	Svært store/ klarte ikke
Hvor stor har den følelsesmessige påvirkningen av helsetilstanden din vært for deg?	Ingen	Litt	En del	Store	Svært store/ klarte ikke
Å konsentrere deg om å gjøre noe i 10 minutter?	Ingen	Litt	En del	Store	Svært store/ klarte ikke
Å gå en lengre strekning, slik som én kilometer?	Ingen	Litt	En del	Store	Svært store/ klarte ikke
Å vaske deg over hele kroppen?	Ingen	Litt	En del	Store	Svært store/ klarte ikke
Å kle på deg?	Ingen	Litt	En del	Store	Svært store/ klarte ikke
Å ha med personer å gjøre som du ikke kjenner?	Ingen	Litt	En del	Store	Svært store/ klarte ikke
Å pleie vennskap?	Ingen	Litt	En del	Store	Svært store/ klarte ikke
Ditt daglige arbeid eller skolegang?	Ingen	Litt	En del	Store	Svært store/ klarte ikke

Totalt sett i de siste 4 ukene, hvor mange dager var disse vanskelighetene til stede?	Før opp antall dager: __________
I de siste 4 ukene, hvor mange dager var du fullstendig ute av stand til å utføre vanlige aktiviteter eller arbeid på grunn av noe ved helsetilstanden din?	Før opp antall dager: __________

I de siste 4 ukene, uten å regne med de dagene du var fullstendig ute av stand, hvor mange dager kuttet du ned på eller reduserte dine vanlige aktiviteter eller arbeid på grunn av noe ved helsetilstanden din?	Før opp antall dager: _________

WHODAS 2.0

31. Sykdomsforståelse

(Dette punktet handler om forståelse av din sykdom. Dersom du ikke har noen sykdom, gå til punkt 32).

Vennligst sett en ring rundt det tallet som best samsvarer med din mening om de følgende spørsmålene:

Hvor mye påvirker sykdommen livet ditt?

0 1 2 3 4 5 6 7 8 9 10

Ingen påvirkning — Voldsom påvirkning

Hvor lenge tror du at sykdommen din vil vare?

0 1 2 3 4 5 6 7 8 9 10

Svært kort tid — For alltid

Hvor mye kontroll føler du at du har over sykdommen din?

0 1 2 3 4 5 6 7 8 9 10

Absolutt ingen kontroll — Svært stor kontroll

Hvor mye mener du at behandlingen din kan hjelpe mot sykdommen din?

0 1 2 3 4 5 6 7 8 9 10

Ikke i det hele tatt — Svært hjelpsom

Hvor mye opplever du symptomer fra sykdommen din?

0 1 2 3 4 5 6 7 8 9 10

Ingen symptomer i det hele tatt — Mange alvorlige symptomer

Hvor bekymret er du angående sykdommen din?

0 1 2 3 4 5 6 7 8 9 10

Ikke bekymret
i det hele tatt

Svært
bekymret

Hvor godt føler du at du forstår sykdommen din?

0 1 2 3 4 5 6 7 8 9 10

Forstår ikke i
det hele tatt

Forstår
svært godt

Hvor mye påvirker sykdommen din deg følelsesmessig? (dvs gjør den deg sint, redd, urolig eller deprimert?)

0 1 2 3 4 5 6 7 8 9 10

Ikke påvirket
følelsesmessig
i det hele tatt

Svært påvirket
følelsesmessig

Vennligst skriv ned i rekkefølge de tre viktigste faktorene som du tror forårsaket sykdommen din.

De aller viktigste årsaker for meg:

1. ____
2. ____
3. ____

BIPQ

32.

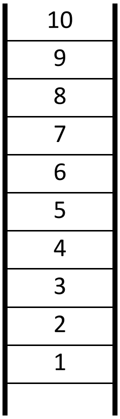
Livets stige

Her er en figur som skal forestille livets stige. Øverste trinnet representerer det beste liv du kan tenke deg, nederste trinn er det verste liv du kan tenke deg.

På hvilket trinn synes du at du står akkurat nå? _______

På hvilket trinn stod du for ett år siden? _______

Hvilket trinn tror du at du vil stå på om ett år? _______



Livets stige

Tusen takk for hjelpen!

Doctoral Theses at The Faculty of Psychology, University of Bergen

1980	Allen, H.M., Dr. philos.	Parent-offspring interactions in willow grouse (Lagopus L. Lagopus).
1981	Myhrer, T., Dr. philos.	Behavioral Studies after selective disruption of hippocampal inputs in albino rats.
1982	Svebak, S., Dr. philos.	The significance of motivation for task-induced tonic physiological changes.
1983	Myhre, G., Dr. philos.	The Biopsychology of behavior in captive Willow ptarmigan.
	Eide, R., Dr. philos.	PSYCHOSOCIAL FACTORS AND INDICES OF HEALTH RISKS. The relationship of psychosocial conditions to subjective complaints, arterial blood pressure, serum cholesterol, serum triglycerides and urinary catecholamines in middle aged populations in Western Norway.
	Værnes, R.J., Dr. philos.	Neuropsychological effects of diving.
1984	Kolstad, A., Dr. philos.	Til diskusjonen om sammenhengen mellom sosiale forhold og psykiske strukturer. En epidemiologisk undersøkelse blant barn og unge.
	Løberg, T., Dr. philos.	Neuropsychological assessment in alcohol dependence.
1985	Hellesnes, T., Dr. philos.	Læring og problemløsning. En studie av den perseptuelle analysens betydning for verbal læring.
	Håland, W., Dr. philos.	Psykoterapi: relasjon, utviklingsprosess og effekt.
1986	Hagtvet, K.A., Dr. philos.	The construct of test anxiety: Conceptual and methodological issues.
	Jellestad, F.K., Dr. philos.	Effects of neuron specific amygdala lesions on fear-motivated behavior in rats.
1987	Aarø, L.E., Dr. philos.	Health behaviour and sosioeconomic Status. A survey among the adult population in Norway.
	Underlid, K., Dr. philos.	Arbeidsløyse i psykososialt perspektiv.
	Laberg, J.C., Dr. philos.	Expectancy and classical conditioning in alcoholics' craving.
	Vollmer, F.C., Dr. philos.	Essays on explanation in psychology.
	Ellertsen, B., Dr. philos.	Migraine and tension headache: Psychophysiology, personality and therapy.
1988	Kaufmann, A., Dr. philos.	Antisosial atferd hos ungdom. En studie av psykologiske determinanter.

	Mykletun, R.J., Dr. philos.	Teacher stress: personality, work-load and health.
	Havik, O.E., Dr. philos.	After the myocardial infarction: A medical and psychological study with special emphasis on perceived illness.
1989	Bråten, S., Dr. philos.	Menneskedyaden. En teoretisk tese om sinnets dialogiske natur med informasjons- og utviklingspsykologiske implikasjoner sammenholdt med utvalgte spedbarnsstudier.
	Wold, B., Dr. psychol.	Lifestyles and physical activity. A theoretical and empirical analysis of socialization among children and adolescents.
1990	Flaten, M.A., Dr. psychol.	The role of habituation and learning in reflex modification.
1991	Alsaker, F.D., Dr. philos.	Global negative self-evaluations in early adolescence.
	Kraft, P., Dr. philos.	AIDS prevention in Norway. Empirical studies on diffusion of knowledge, public opinion, and sexual behaviour.
	Endresen, I.M., Dr. philos.	Psychoimmuniological stress markers in working life.
	Faleide, A.O., Dr. philos.	Asthma and allergy in childhood. Psychosocial and psychotherapeutic problems.
1992	Dalen, K., Dr. philos.	Hemispheric asymmetry and the Dual-Task Paradigm: An experimental approach.
	Bø, I.B., Dr. philos.	Ungdoms sosiale økologi. En undersøkelse av 14-16 åringers sosiale nettverk.
	Nivison, M.E., Dr. philos.	The relationship between noise as an experimental and environmental stressor, physiological changes and psychological factors.
	Torgersen, A.M., Dr. philos.	Genetic and environmental influence on temperamental behaviour. A longitudinal study of twins from infancy to adolescence.
1993	Larsen, S., Dr. philos.	Cultural background and problem drinking.
	Nordhus, I.H., Dr. philos.	Family caregiving. A community psychological study with special emphasis on clinical interventions.
	Thuen, F., Dr. psychol.	Accident-related behaviour among children and young adolescents: Prediction and prevention.
	Solheim, R., Dr. philos.	Spesifikke lærevansker. Diskrepanskriteriet anvendt i seleksjonsmetodikk.
	Johnsen, B.H., Dr. psychol.	Brain assymetry and facial emotional expressions: Conditioning experiments.
1994	Tønnessen, F.E., Dr. philos.	The etiology of Dyslexia.
	Kvale, G., Dr. psychol.	Psychological factors in anticipatory nausea and vomiting in cancer chemotherapy.

	Asbjørnsen, A.E., Dr. psychol.	Structural and dynamic factors in dichotic listening: An interactional model.
	Bru, E., Dr. philos.	The role of psychological factors in neck, shoulder and low back pain among female hospitale staff.
	Braathen, E.T., Dr. psychol.	Prediction of exellence and discontinuation in different types of sport: The significance of motivation and EMG.
	Johannessen, B.F., Dr. philos.	Det flytende kjønnet. Om lederskap, politikk og identitet.
1995	Sam, D.L., Dr. psychol.	Acculturation of young immigrants in Norway: A psychological and socio-cultural adaptation.
	Bjaalid, I.-K., Dr. philos	Component processes in word recognition.
	Martinsen, Ø., Dr. philos.	Cognitive style and insight.
	Nordby, H., Dr. philos.	Processing of auditory deviant events: Mismatch negativity of event-related brain potentials.
	Raaheim, A., Dr. philos.	Health perception and health behaviour, theoretical considerations, empirical studies, and practical implications.
	Seltzer, W.J., Dr.philos.	Studies of Psychocultural Approach to Families in Therapy.
	Brun, W., Dr.philos.	Subjective conceptions of uncertainty and risk.
	Aas, H.N., Dr. psychol.	Alcohol expectancies and socialization: Adolescents learning to drink.
	Bjørkly, S., Dr. psychol.	Diagnosis and prediction of intra-institutional aggressive behaviour in psychotic patients
1996	Anderssen, Norman, Dr. psychol.	Physical activity of young people in a health perspective: Stability, change and social influences.
	Sandal, Gro Mjeldheim, Dr. psychol.	Coping in extreme environments: The role of personality.
	Strumse, Einar, Dr. philos.	The psychology of aesthetics: explaining visual preferences for agrarian landscapes in Western Norway.
	Hestad, Knut, Dr. philos.	Neuropsychological deficits in HIV-1 infection.
	Lugoe, L.Wycliffe, Dr. philos.	Prediction of Tanzanian students' HIV risk and preventive behaviours
	Sandvik, B. Gunnhild, Dr. philos.	Fra distriktsjordmor til institusjonsjordmor. Fremveksten av en profesjon og en profesjonsutdanning
	Lie, Gro Therese, Dr. psychol.	The disease that dares not speak its name: Studies on factors of importance for coping with HIV/AIDS in Northern Tanzania
	Øygard, Lisbet, Dr. philos.	Health behaviors among young adults. A psychological and sociological approach
	Stormark, Kjell Morten, Dr. psychol.	Emotional modulation of selective attention: Experimental and clinical evidence.

	Einarsen, Ståle, Dr. psychol.	Bullying and harassment at work: epidemiological and psychosocial aspects.
1997	Knivsberg, Ann-Mari, Dr. philos.	Behavioural abnormalities and childhood psychopathology: Urinary peptide patterns as a potential tool in diagnosis and remediation.
	Eide, Arne H., Dr. philos.	Adolescent drug use in Zimbabwe. Cultural orientation in a global-local perspective and use of psychoactive substances among secondary school students.
	Sørensen, Marit, Dr. philos.	The psychology of initiating and maintaining exercise and diet behaviour.
	Skjæveland, Oddvar, Dr. psychol.	Relationships between spatial-physical neighborhood attributes and social relations among neighbors.
	Zewdie, Teka, Dr. philos.	Mother-child relational patterns in Ethiopia. Issues of developmental theories and intervention programs.
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	Manger, Terje, Dr. philos.	Gender differences in mathematical achievement among Norwegian elementary school students.
1998 **V**	Lindstrøm, Torill Christine, Dr. philos.	«Good Grief»: Adapting to Bereavement.
	Skogstad, Anders, Dr. philos.	Effects of leadership behaviour on job satisfaction, health and efficiency.
	Haldorsen, Ellen M. Håland, Dr. psychol.	Return to work in low back pain patients.
	Besemer, Susan P., Dr. philos.	Creative Product Analysis: The Search for a Valid Model for Understanding Creativity in Products.
H	Winje, Dagfinn, Dr. psychol.	Psychological adjustment after severe trauma. A longitudinal study of adults' and children's posttraumatic reactions and coping after the bus accident in Måbødalen, Norway 1988.
	Vosburg, Suzanne K., Dr. philos.	The effects of mood on creative problem solving.
	Eriksen, Hege R., Dr. philos.	Stress and coping: Does it really matter for subjective health complaints?
	Jakobsen, Reidar, Dr. psychol.	Empiriske studier av kunnskap og holdninger om hiv/aids og den normative seksuelle utvikling i ungdomsårene.
1999 **V**	Mikkelsen, Aslaug, Dr. philos.	Effects of learning opportunities and learning climate on occupational health.
	Samdal, Oddrun, Dr. philos.	The school environment as a risk or resource for students' health-related behaviours and subjective well-being.
	Friestad, Christine, Dr. philos.	Social psychological approaches to smoking.
	Ekeland, Tor-Johan, Dr. philos.	Meining som medisin. Ein analyse av placebofenomenet og implikasjoner for terapi og terapeutiske teoriar.

H	Saban, Sara, Dr. psychol.	Brain Asymmetry and Attention: Classical Conditioning Experiments.
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	Engen, Liv, Dr. philos.	Kartlegging av leseferdighet på småskoletrinnet og vurdering av faktorer som kan være av betydning for optimal leseutvikling.
2000 V	Hovland, Ole Johan, Dr. philos.	Transforming a self-preserving "alarm" reaction into a self-defeating emotional response: Toward an integrative approach to anxiety as a human phenomenon.
	Lillejord, Sølvi, Dr. philos.	Handlingsrasjonalitet og spesialundervisning. En analyse av aktørperspektiver.
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H	Sandbak, Tone, Dr. psychol.	Alcohol consumption and preference in the rat: The significance of individual differences and relationships to stress pathology
	Eid, Jarle, Dr. psychol.	Early predictors of PTSD symptom reporting; The significance of contextual and individual factors.
2001 V	Skinstad, Anne Helene, Dr. philos.	Substance dependence and borderline personality disorders.
	Binder, Per-Einar, Dr. psychol.	Individet og den meningsbærende andre. En teoretisk undersøkelse av de mellommenneskelige forutsetningene for psykisk liv og utvikling med utgangspunkt i Donald Winnicotts teori.
	Roald, Ingvild K., Dr. philos.	Building of concepts. A study of Physics concepts of Norwegian deaf students.
H	Fekadu, Zelalem W., Dr. philos.	Predicting contraceptive use and intention among a sample of adolescent girls. An application of the theory of planned behaviour in Ethiopian context.
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	Råheim, Målfrid, Dr. philos.	Kvinners kroppserfaring og livssammenheng. En fenomenologisk – hermeneutisk studie av friske kvinner og kvinner med kroniske muskelsmerter.
	Engelsen, Birthe Kari, Dr. psychol.	Measurement of the eating problem construct.
	Lau, Bjørn, Dr. philos.	Weight and eating concerns in adolescence.
2002 V	Ihlebæk, Camilla, Dr. philos.	Epidemiological studies of subjective health complaints.

	Rosén, Gunnar O. R., Dr. philos.	The phantom limb experience. Models for understanding and treatment of pain with hypnosis.
	Høines, Marit Johnsen, Dr. philos.	Fleksible språkrom. Matematikklæring som tekstutvikling.
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	Kallestad, Jan Helge, Dr. philos.	Teachers, schools and implementation of the Olweus Bullying Prevention Program.
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	Holden, Børge, Dr. philos.	Følger av atferdsanalytiske forklaringer for atferdsanalysens tilnærming til utforming av behandling.
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	Hammar, Åsa Karin, Dr. psychol.	Major depression and cognitive dysfunction- An experimental study of the cognitive effort hypothesis.
	Sprugevica, Ieva, Dr. philos.	The impact of enabling skills on early reading acquisition.
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H	Hansen, Anita Lill, Dr. psychol.	The influence of heart rate variability in the regulation of attentional and memory processes.
	Dyregrov, Kari, Dr. philos.	The loss of child by suicide, SIDS, and accidents: Consequences, needs and provisions of help.
2004 V	Torsheim, Torbjørn, Dr. psychol.	Student role strain and subjective health complaints: Individual, contextual, and longitudinal perspectives.

	Haugland, Bente Storm Mowatt Dr. psychol.	Parental alcohol abuse. Family functioning and child adjustment.
	Milde, Anne Marita, Dr. psychol.	Ulcerative colitis and the role of stress. Animal studies of psychobiological factors in relationship to experimentally induced colitis.
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	Mæhle, Magne, Dr. philos.	Re-inventing the child in family therapy: An investigation of the relevance and applicability of theory and research in child development for family therapy involving children.
	Kobbeltvedt, Therese, Dr. psychol.	Risk and feelings: A field approach.
2004 H	Thomsen, Tormod, Dr. psychol.	Localization of attention in the brain.
	Løberg, Else-Marie, Dr. psychol.	Functional laterality and attention modulation in schizophrenia: Effects of clinical variables.
	Kyrkjebø, Jane Mikkelsen, Dr. philos.	Learning to improve: Integrating continuous quality improvement learning into nursing education.
	Laumann, Karin, Dr. psychol.	Restorative and stress-reducing effects of natural environments: Experiencal, behavioural and cardiovascular indices.
	Holgersen, Helge, PhD	Mellom oss - Essay i relasjonell psykoanalyse.
2005 V	Hetland, Hilde, Dr. psychol.	Leading to the extraordinary? Antecedents and outcomes of transformational leadership.
	Iversen, Anette Christine, Dr. philos.	Social differences in health behaviour: the motivational role of perceived control and coping.
2005 H	Mathisen, Gro Ellen, PhD	Climates for creativity and innovation: Definitions, measurement, predictors and consequences.
	Sævi, Tone, Dr. philos.	Seeing disability pedagogically – The lived experience of disability in the pedagogical encounter.
	Wiium, Nora, PhD	Intrapersonal factors, family and school norms: combined and interactive influence on adolescent smoking behaviour.
	Kanagaratnam, Pushpa, PhD	Subjective and objective correlates of Posttraumatic Stress in immigrants/refugees exposed to political violence.
	Larsen, Torill M. B. , PhD	Evaluating principals` and teachers` implementation of Second Step. A case study of four Norwegian primary schools.
	Bancila, Delia, PhD	Psychosocial stress and distress among Romanian adolescents and adults.
2006 V	Hillestad, Torgeir Martin, Dr. philos.	Normalitet og avvik. Forutsetninger for et objektivt psykopatologisk avviksbegrep. En psykologisk, sosial, erkjennelsesteoretisk og teorihistorisk framstilling.

	Nordanger, Dag Øystein, Dr. psychol.	Psychosocial discourses and responses to political violence in post-war Tigray, Ethiopia.
	Rimol, Lars Morten, PhD	Behavioral and fMRI studies of auditory laterality and speech sound processing.
	Krumsvik, Rune Johan, Dr. philos.	ICT in the school. ICT-initiated school development in lower secondary school.
	Norman, Elisabeth, Dr. psychol.	Gut feelings and unconscious thought: An exploration of fringe consiousness in implicit cognition.
	Israel, K Pravin, Dr. psychol.	Parent involvement in the mental health care of children and adolescents. Emperical studies from clinical care setting.
	Glasø, Lars, PhD	Affects and emotional regulation in leader-subordinate relationships.
	Knutsen, Ketil, Dr. philos.	HISTORIER UNGDOM LEVER – En studie av hvordan ungdommer bruker historie for å gjøre livet meningsfullt.
	Matthiesen, Stig Berge, PhD	Bullying at work. Antecedents and outcomes.
2006 H	Gramstad, Arne, PhD	Neuropsychological assessment of cognitive and emotional functioning in patients with epilepsy.
	Bendixen, Mons, PhD	Antisocial behaviour in early adolescence: Methodological and substantive issues.
	Mrumbi, Khalifa Maulid, PhD	Parental illness and loss to HIV/AIDS as experienced by AIDS orphans aged between 12-17 years from Temeke District, Dar es Salaam, Tanzania: A study of the children’s psychosocial health and coping responses.
	Hetland, Jørn, Dr. psychol.	The nature of subjective health complaints in adolescence: Dimensionality, stability, and psychosocial predictors
	Kakoko, Deodatus Conatus Vitalis, PhD	Voluntary HIV counselling and testing service uptake among primary school teachers in Mwanza, Tanzania: assessment of socio-demographic, psychosocial and socio-cognitive aspects
	Mykletun, Arnstein, Dr. psychol.	Mortality and work-related disability as long-term consequences of anxiety and depression: Historical cohort designs based on the HUNT-2 study
	Sivertsen, Børge, PhD	Insomnia in older adults. Consequences, assessment and treatment.
2007 V	Singhammer, John, Dr. philos.	Social conditions from before birth to early adulthood – the influence on health and health behaviour
	Janvin, Carmen Ani Cristea, PhD	Cognitive impairment in patients with Parkinson’s disease: profiles and implications for prognosis
	Braarud, Hanne Cecilie, Dr.psychol.	Infant regulation of distress: A longitudinal study of transactions between mothers and infants
	Tveito, Torill Helene, PhD	Sick Leave and Subjective Health Complaints

	Magnussen, Liv Heide, PhD	Returning disability pensioners with back pain to work
	Thuen, Elin Marie, Dr.philos.	Learning environment, students' coping styles and emotional and behavioural problems. A study of Norwegian secondary school students.
	Solberg, Ole Asbjørn, PhD	Peacekeeping warriors – A longitudinal study of Norwegian peacekeepers in Kosovo
2007 H	Søreide, Gunn Elisabeth, Dr.philos.	Narrative construction of teacher identity
	Svensen, Erling, PhD	WORK & HEALTH. Cognitive Activation Theory of Stress applied in an organisational setting.
	Øverland, Simon Nygaard, PhD	Mental health and impairment in disability benefits. Studies applying linkages between health surveys and administrative registries.
	Eichele, Tom, PhD	Electrophysiological and Hemodynamic Correlates of Expectancy in Target Processing
	Børhaug, Kjetil, Dr.philos.	Oppseding til demokrati. Ein studie av politisk oppseding i norsk skule.
	Eikeland, Thorleif, Dr.philos.	Om å vokse opp på barnehjem og på sykehus. En undersøkelse av barnehjemsbarns opplevelser på barnehjem sammenholdt med sanatoriebarns beskrivelse av langvarige sykehusopphold – og et forsøk på forklaring.
	Wadel, Carl Cato, Dr.philos.	Medarbeidersamhandling og medarbeiderledelse i en lagbasert organisasjon
	Vinje, Hege Forbech, PhD	Thriving despite adversity: Job engagement and self-care among community nurses
	Noort, Maurits van den, PhD	Working memory capacity and foreign language acquisition
2008 V	Breivik, Kyrre, Dr.psychol.	The Adjustment of Children and Adolescents in Different Post-Divorce Family Structures. A Norwegian Study of Risks and Mechanisms.
	Johnsen, Grethe E., PhD	Memory impairment in patients with posttraumatic stress disorder
	Sætrevik, Bjørn, PhD	Cognitive Control in Auditory Processing
	Carvalhosa, Susana Fonseca, PhD	Prevention of bullying in schools: an ecological model
2008 H	Brønnick, Kolbjørn Selvåg	Attentional dysfunction in dementia associated with Parkinson's disease.
	Posserud, Maj-Britt Rocio	Epidemiology of autism spectrum disorders
	Haug, Ellen	Multilevel correlates of physical activity in the school setting
	Skjerve, Arvid	Assessing mild dementia – a study of brief cognitive tests.

	Kjønniksen, Lise	The association between adolescent experiences in physical activity and leisure time physical activity in adulthood: a ten year longitudinal study
	Gundersen, Hilde	The effects of alcohol and expectancy on brain function
	Omvik, Siri	Insomnia – a night and day problem
2009 V	Molde, Helge	Pathological gambling: prevalence, mechanisms and treatment outcome.
	Foss, Else	Den omsorgsfulle væremåte. En studie av voksnes væremåte i forhold til barn i barnehagen.
	Westrheim, Kariane	Education in a Political Context: A study of Konwledge Processes and Learning Sites in the PKK.
	Wehling, Eike	Cognitive and olfactory changes in aging
	Wangberg, Silje C.	Internet based interventions to support health behaviours: The role of self-efficacy.
	Nielsen, Morten B.	Methodological issues in research on workplace bullying. Operationalisations, measurements and samples.
	Sandu, Anca Larisa	MRI measures of brain volume and cortical complexity in clinical groups and during development.
	Guribye, Eugene	Refugees and mental health interventions
	Sørensen, Lin	Emotional problems in inattentive children – effects on cognitive control functions.
	Tjomsland, Hege E.	Health promotion with teachers. Evaluation of the Norwegian Network of Health Promoting Schools: Quantitative and qualitative analyses of predisposing, reinforcing and enabling conditions related to teacher participation and program sustainability.
	Helleve, Ingrid	Productive interactions in ICT supported communities of learners
2009 H	Skorpen, Aina Øye, Christine	Dagliglivet i en psykiatrisk institusjon: En analyse av miljøterapeutiske praksiser
	Andreassen, Cecilie Schou	WORKAHOLISM – Antecedents and Outcomes
	Stang, Ingun	Being in the same boat: An empowerment intervention in breast cancer self-help groups
	Sequeira, Sarah Dorothee Dos Santos	The effects of background noise on asymmetrical speech perception
	Kleiven, Jo, dr.philos.	The Lillehammer scales: Measuring common motives for vacation and leisure behavior
	Jónsdóttir, Guðrún	Dubito ergo sum? Ni jenter møter naturfaglig kunnskap.
	Hove, Oddbjørn	Mental health disorders in adults with intellectual disabilities - Methods of assessment and prevalence of mental health disorders and problem behaviour
	Wageningen, Heidi Karin van	The role of glutamate on brain function

	Bjørkvik, Jofrid	God nok? Selvaktelse og interpersonlig fungering hos pasienter innen psykisk helsevern: Forholdet til diagnoser, symptomer og behandlingsutbytte
	Andersson, Martin	A study of attention control in children and elderly using a forced-attention dichotic listening paradigm
	Almås, Aslaug Grov	Teachers in the Digital Network Society: Visions and Realities. A study of teachers' experiences with the use of ICT in teaching and learning.
	Ulvik, Marit	Lærerutdanning som danning? Tre stemmer i diskusjonen
2010 V	Skår, Randi	Læringsprosesser i sykepleieres profesjonsutøvelse. En studie av sykepleieres læringserfaringer.
	Roald, Knut	Kvalitetsvurdering som organisasjonslæring mellom skole og skoleeigar
	Lunde, Linn-Heidi	Chronic pain in older adults. Consequences, assessment and treatment.
	Danielsen, Anne Grete	Perceived psychosocial support, students' self-reported academic initiative and perceived life satisfaction
	Hysing, Mari	Mental health in children with chronic illness
	Olsen, Olav Kjellevold	Are good leaders moral leaders? The relationship between effective military operational leadership and morals
	Riese, Hanne	Friendship and learning. Entrepreneurship education through mini-enterprises.
	Holthe, Asle	Evaluating the implementation of the Norwegian guidelines for healthy school meals: A case study involving three secondary schools
H	Hauge, Lars Johan	Environmental antecedents of workplace bullying: A multi-design approach
	Bjørkelo, Brita	Whistleblowing at work: Antecedents and consequences
	Reme, Silje Endresen	Common Complaints – Common Cure? Psychiatric comorbidity and predictors of treatment outcome in low back pain and irritable bowel syndrome
	Helland, Wenche Andersen	Communication difficulties in children identified with psychiatric problems
	Beneventi, Harald	Neuronal correlates of working memory in dyslexia
	Thygesen, Elin	Subjective health and coping in care-dependent old persons living at home
	Aanes, Mette Marthinussen	Poor social relationships as a threat to belongingness needs. Interpersonal stress and subjective health complaints: Mediating and moderating factors.
	Anker, Morten Gustav	Client directed outcome informed couple therapy

	Bull, Torill	Combining employment and child care: The subjective well-being of single women in Scandinavia and in Southern Europe
	Viig, Nina Grieg	Tilrettelegging for læreres deltakelse i helsefremmende arbeid. En kvalitativ og kvantitativ analyse av sammenhengen mellom organisatoriske forhold og læreres deltakelse i utvikling og implementering av Europeisk Nettverk av Helsefremmende Skoler i Norge
	Wolff, Katharina	To know or not to know? Attitudes towards receiving genetic information among patients and the general public.
	Ogden, Terje, dr.philos.	Familiebasert behandling av alvorlige atferdsproblemer blant barn og ungdom. Evaluering og implementering av evidensbaserte behandlingsprogrammer i Norge.
	Solberg, Mona Elin	Self-reported bullying and victimisation at school: Prevalence, overlap and psychosocial adjustment.
2011 V	Bye, Hege Høivik	Self-presentation in job interviews. Individual and cultural differences in applicant self-presentation during job interviews and hiring managers' evaluation
	Notelaers, Guy	Workplace bullying. A risk control perspective.
	Moltu, Christian	Being a therapist in difficult therapeutic impasses. A hermeneutic phenomenological analysis of skilled psychotherapists' experiences, needs, and strategies in difficult therapies ending well.
	Myrseth, Helga	Pathological Gambling - Treatment and Personality Factors
	Schanche, Elisabeth	From self-criticism to self-compassion. An empirical investigation of hypothesized change prosesses in the Affect Phobia Treatment Model of short-term dynamic psychotherapy for patients with Cluster C personality disorders.
	Våpenstad, Eystein Victor, dr.philos.	Det tempererte nærvær. En teoretisk undersøkelse av psykoterapautens subjektivitet i psykoanalyse og psykoanalytisk psykoterapi.
	Haukebø, Kristin	Cognitive, behavioral and neural correlates of dental and intra-oral injection phobia. Results from one treatment and one fMRI study of randomized, controlled design.
	Harris, Anette	Adaptation and health in extreme and isolated environments. From 78°N to 75°S.
	Bjørknes, Ragnhild	Parent Management Training-Oregon Model: intervention effects on maternal practice and child behavior in ethnic minority families
	Mamen, Asgeir	Aspects of using physical training in patients with substance dependence and additional mental distress
	Espevik, Roar	Expert teams: Do shared mental models of team members make a difference
	Haara, Frode Olav	Unveiling teachers' reasons for choosing practical activities in mathematics teaching

2011 H	Hauge, Hans Abraham	How can employee empowerment be made conducive to both employee health and organisation performance? An empirical investigation of a tailor-made approach to organisation learning in a municipal public service organisation.
	Melkevik, Ole Rogstad	Screen-based sedentary behaviours: pastimes for the poor, inactive and overweight? A cross-national survey of children and adolescents in 39 countries.
	Vøllestad, Jon	Mindfulness-based treatment for anxiety disorders. A quantitative review of the evidence, results from a randomized controlled trial, and a qualitative exploration of patient experiences.
	Tolo, Astrid	Hvordan blir lærerkompetanse konstruert? En kvalitativ studie av PPU-studenters kunnskapsutvikling.
	Saus, Evelyn-Rose	Training effectiveness: Situation awareness training in simulators
	Nordgreen, Tine	Internet-based self-help for social anxiety disorder and panic disorder. Factors associated with effect and use of self-help.
	Munkvold, Linda Helen	Oppositional Defiant Disorder: Informant discrepancies, gender differences, co-occuring mental health problems and neurocognitive function.
	Christiansen, Øivin	Når barn plasseres utenfor hjemmet: beslutninger, forløp og relasjoner. Under barnevernets (ved)tak.
	Brunborg, Geir Scott	Conditionability and Reinforcement Sensitivity in Gambling Behaviour
	Hystad, Sigurd William	Measuring Psychological Resiliency: Validation of an Adapted Norwegian Hardiness Scale
2012 V	Roness, Dag	Hvorfor bli lærer? Motivasjon for utdanning og utøving.
	Fjermestad, Krister Westlye	The therapeutic alliance in cognitive behavioural therapy for youth anxiety disorders
	Jenssen, Eirik Sørnes	Tilpasset opplæring i norsk skole: politikeres, skolelederes og læreres handlingsvalg
	Saksvik-Lehouillier, Ingvild	Shift work tolerance and adaptation to shift work among offshore workers and nurses
	Johansen, Venke Frederike	Når det intime blir offentlig. Om kvinners åpenhet om brystkreft og om markedsføring av brystkreftsaken.
	Herheim, Rune	Pupils collaborating in pairs at a computer in mathematics learning: investigating verbal communication patterns and qualities
	Vie, Tina Løkke	Cognitive appraisal, emotions and subjective health complaints among victims of workplace bullying: A stress-theoretical approach
	Jones, Lise Øen	Effects of reading skills, spelling skills and accompanying efficacy beliefs on participation in education. A study in Norwegian prisons.

2012 H	Danielsen, Yngvild Sørebø	Childhood obesity – characteristics and treatment. Psychological perspectives.
	Horverak, Jøri Gytre	Sense or sensibility in hiring processes. Interviewee and interviewer characteristics as antecedents of immigrant applicants' employment probabilities. An experimental approach.
	Jøsendal, Ola	Development and evaluation of BE smokeFREE, a school-based smoking prevention program
	Osnes, Berge	Temporal and Posterior Frontal Involvement in Auditory Speech Perception
	Drageset, Sigrunn	Psychological distress, coping and social support in the diagnostic and preoperative phase of breast cancer
	Aasland, Merethe Schanke	Destructive leadership: Conceptualization, measurement, prevalence and outcomes
	Bakibinga, Pauline	The experience of job engagement and self-care among Ugandan nurses and midwives
	Skogen, Jens Christoffer	Foetal and early origins of old age health. Linkage between birth records and the old age cohort of the Hordaland Health Study (HUSK)
	Leversen, Ingrid	Adolescents' leisure activity participation and their life satisfaction: The role of demographic characteristics and psychological processes
	Hanss, Daniel	Explaining sustainable consumption: Findings from cross-sectional and intervention approaches
	Rød, Per Arne	Barn i klem mellom foreldrekonflikter og samfunnsmessig beskyttelse
2013 V	Mentzoni, Rune Aune	Structural Characteristics in Gambling
	Knudsen, Ann Kristin	Long-term sickness absence and disability pension award as consequences of common mental disorders. Epidemiological studies using a population-based health survey and official ill health benefit registries.
	Strand, Mari	Emotional information processing in recurrent MDD
	Veseth, Marius	Recovery in bipolar disorder. A reflexive-collaborative exploration of the lived experiences of healing and growth when battling a severe mental illness
	Mæland, Silje	Sick leave for patients with severe subjective health complaints. Challenges in general practice.
	Mjaaland, Thera	At the frontiers of change? Women and girls' pursuit of education in north-western Tigray, Ethiopia
	Odéen, Magnus	Coping at work. The role of knowledge and coping expectancies in health and sick leave.
	Hynninen, Kia Minna Johanna	Anxiety, depression and sleep disturbance in chronic obstructive pulmonary disease (COPD). Associations, prevalence and effect of psychological treatment.

	Flo, Elisabeth	Sleep and health in shift working nurses
	Aasen, Elin Margrethe	From paternalism to patient participation? The older patients undergoing hemodialysis, their next of kin and the nurses: a discursive perspective on perception of patient participation in dialysis units
	Ekornås, Belinda	Emotional and Behavioural Problems in Children: Self-perception, peer relationships, and motor abilities
	Corbin, J. Hope	North-South Partnerships for Health: Key Factors for Partnership Success from the Perspective of the KIWAKKUKI
	Birkeland, Marianne Skogbrott	Development of global self-esteem: The transition from adolescence to adulthood
2013 H	Gianella-Malca, Camila	Challenges in Implementing the Colombian Constitutional Court's Health-Care System Ruling of 2008
	Hovland, Anders	Panic disorder – Treatment outcomes and psychophysiological concomitants
	Mortensen, Øystein	The transition to parenthood – Couple relationships put to the test
	Årdal, Guro	Major Depressive Disorder – a Ten Year Follow-up Study. Inhibition, Information Processing and Health Related Quality of Life
	Johansen, Rino Bandlitz	The impact of military identity on performance in the Norwegian armed forces
	Bøe, Tormod	Socioeconomic Status and Mental Health in Children and Adolescents
2014 V	Nordmo, Ivar	Gjennom nåløyet – studenters læringserfaringer i psykologutdanningen
	Dovran, Anders	Childhood Trauma and Mental Health Problems in Adult Life
	Hegelstad, Wenche ten Velden	Early Detection and Intervention in Psychosis: A Long-Term Perspective
	Urheim, Ragnar	Forståelse av pasientaggresjon og forklaringer på nedgang i voldsrate ved Regional sikkerhetsavdeling, Sandviken sykehus
	Kinn, Liv Grethe	Round-Trips to Work. Qualitative studies of how persons with severe mental illness experience work integration.
	Rød, Anne Marie Kinn	Consequences of social defeat stress for behaviour and sleep. Short-term and long-term assessments in rats.
	Nygård, Merethe	Schizophrenia – Cognitive Function, Brain Abnormalities, and Cannabis Use
	Tjora, Tore	Smoking from adolescence through adulthood: the role of family, friends, depression and socioeconomic status. Predictors of smoking from age 13 to 30 in the "The Norwegian Longitudinal Health Behaviour Study" (NLHB)
	Vangsnes, Vigdis	The Dramaturgy and Didactics of Computer Gaming. A Study of a Medium in the Educational Context of Kindergartens.

	Nordahl, Kristin Berg	Early Father-Child Interaction in a Father-Friendly Context: Gender Differences, Child Outcomes, and Protective Factors related to Fathers' Parenting Behaviors with One-year-olds
2014 H	Sandvik, Asle Makoto	Psychopathy – the heterogenety of the construct
	Skotheim, Siv	Maternal emotional distress and early mother-infant interaction: Psychological, social and nutritional contributions
	Halleland, Helene Barone	Executive Functioning in adult Attention Deficit Hyperactivity Disorder (ADHD). From basic mechanisms to functional outcome.
	Halvorsen, Kirsti Vindal	Partnerskap i lærerutdanning, sett fra et økologisk perspektiv
	Solbue, Vibeke	Dialogen som visker ut kategorier. En studie av hvilke erfaringer innvandrerungdommer og norskfødte med innvandrerforeldre har med videregående skole. Hva forteller ungdommenes erfaringer om videregående skoles håndtering av etniske ulikheter?
	Kvalevaag, Anne Lise	Fathers' mental health and child development. The predictive value of fathers' psychological distress during pregnancy for the social, emotional and behavioural development of their children
	Sandal, Ann Karin	Ungdom og utdanningsval. Om elevar sine opplevingar av val og overgangsprosessar.
	Haug, Thomas	Predictors and moderators of treatment outcome from high- and low-intensity cognitive behavioral therapy for anxiety disorders. Association between patient and process factors, and the outcome from guided self-help, stepped care, and face-to-face cognitive behavioral therapy.
	Sjølie, Hege	Experiences of Members of a Crisis Resolution Home Treatment Team. Personal history, professional role and emotional support in a CRHT team.
	Falkenberg, Liv Eggset	Neuronal underpinnings of healthy and dysfunctional cognitive control
	Mrdalj, Jelena	The early life condition. Importance for sleep, circadian rhythmicity, behaviour and response to later life challenges
	Hesjedal, Elisabeth	Tverrprofesjonelt samarbeid mellom skule og barnevern: Kva kan støtte utsette barn og unge?
2015 V	Hauken, May Aasebø	«*The cancer treatment was only half the work!*» A Mixed-Method Study of Rehabilitation among Young Adult Cancer Survivors
	Ryland, Hilde Katrin	Social functioning and mental health in children: the influence of chronic illness and intellectual function
	Rønsen, Anne Kristin	Vurdering som profesjonskompetanse. Refleksjonsbasert utvikling av læreres kompetanse i formativ vurdering

	Hoff, Helge Andreas	Thinking about Symptoms of Psychopathy in Norway: Content Validation of the Comprehensive Assessment of Psychopathic Personality (CAPP) Model in a Norwegian Setting
	Schmid, Marit Therese	Executive Functioning in recurrent- and first episode Major Depressive Disorder. Longitudinal studies
	Sand, Liv	Body Image Distortion and Eating Disturbances in Children and Adolescents
	Matanda, Dennis Juma	Child physical growth and care practices in Kenya: Evidence from Demographic and Health Surveys
	Amugsi, Dickson Abanimi	Child care practices, resources for care, and nutritional outcomes in Ghana: Findings from Demographic and Health Surveys
	Jakobsen, Hilde	The good beating: Social norms supporting men’s partner violence in Tanzania
	Sagoe, Dominic	Nonmedical anabolic-androgenic steroid use: Prevalence, attitudes, and social perception
	Eide, Helene Marie Kjærgård	Narrating the relationship between leadership and learning outcomes. A study of public narratives in the Norwegian educational sector.
2015 H	Wubs, Annegreet Gera	Intimate partner violence among adolescents in South Africa and Tanzania
	Hjelmervik, Helene Susanne	Sex and sex-hormonal effects on brain organization of fronto-parietal networks
	Dahl, Berit Misund	The meaning of professional identity in public health nursing
	Røykenes, Kari	Testangst hos sykepleierstudenter: «Alternativ behandling»
	Bless, Josef Johann	The smartphone as a research tool in psychology. Assessment of language lateralization and training of auditory attention.
	Løvvik, Camilla Margrethe Sigvaldsen	Common mental disorders and work participation – the role of return-to-work expectations
	Lehmann, Stine	Mental Disorders in Foster Children: A Study of Prevalence, Comorbidity, and Risk Factors
	Knapstad, Marit	Psychological factors in long-term sickness absence: the role of shame and social support. Epidemiological studies based on the Health Assets Project.
2016 V	Kvestad, Ingrid	Biological risks and neurodevelopment in young North Indian children
	Sælør, Knut Tore	Hinderløyper, halmstrå og hengende snører. En kvalitativ studie av håp innenfor psykisk helse- og rusfeltet.
	Mellingen, Sonja	Alkoholbruk, partilfredshet og samlivsstatus. Før, inn i, og etter svangerskapet – korrelater eller konsekvenser?
	Thun, Eirunn	Shift work: negative consequences and protective factors

	Hilt, Line Torbjørnsen	The borderlands of educational inclusion. Analyses of inclusion and exclusion processes for minority language students
	Havnen, Audun	Treatment of obsessive-compulsive disorder and the importance of assessing clinical effectiveness
	Slåtten, Hilde	Gay-related name-calling among young adolescents. Exploring the importance of the context.
	Ree, Eline	Staying at work. The role of expectancies and beliefs in health and workplace interventions.
	Morken, Frøydis	Reading and writing processing in dyslexia
2016 H	Løvoll, Helga Synnevåg	Inside the outdoor experience. On the distinction between pleasant and interesting feelings and their implication in the motivational process.
	Hjeltnes, Aslak	Facing social fears: An investigation of mindfulness-based stress reduction for young adults with social anxiety disorder
	Øyeflaten, Irene Larsen	Long-term sick leave and work rehabilitation. Prognostic factors for return to work.
	Henriksen, Roger Ekeberg	Social relationships, stress and infection risk in mother and child
	Johnsen, Iren	«Only a friend» - The bereavement process of young adults who have lost a friend to a traumatic death. A mixed methods study.
	Helle, Siri	Cannabis use in non-affective psychoses: Relationship to age at onset, cognitive functioning and social cognition
	Glambek, Mats	Workplace bullying and expulsion in working life. A representative study addressing prospective associations and explanatory conditions.
	Oanes, Camilla Jensen	Tilbakemelding i terapi. På hvilke måter opplever terapeuter at tilbakemeldingsprosedyrer kan virke inn på terapeutiske praksiser?
	Reknes, Iselin	Exposure to workplace bullying among nurses: Health outcomes and individual coping
	Chimhutu, Victor	Results-Based Financing (RBF) in the health sector of a low-income country. From agenda setting to implementation: The case of Tanzania
	Ness, Ingunn Johanne	The Room of Opportunity. Understanding how knowledge and ideas are constructed in multidisciplinary groups working with developing innovative ideas.
	Hollekim, Ragnhild	Contemporary discourses on children and parenting in Norway. An empirical study based on two cases.
	Doran, Rouven	Eco-friendly travelling: The relevance of perceived norms and social comparison
2017 V	Katisi, Masego	The power of context in health partnerships: Exploring synergy and antagony between external and internal ideologies in implementing Safe Male Circumcision (SMC) for HIV prevention in Botswana

	Jamaludin, Nor Lelawati Binti	The “why” and “how” of International Students’ Ambassadorship Roles in International Education
	Berthelsen, Mona	Effects of shift work and psychological and social work factors on mental distress. Studies of onshore/offshore workers and nurses in Norway.
	Krane, Vibeke	Lærer-elev-relasjoner, elevers psykiske helse og frafall i videregående skole – en eksplorerende studie om samarbeid og den store betydningen av de små ting
	Søvik, Margaret Ljosnes	Evaluating the implementation of the Empowering Coaching™ program in Norway
	Tonheim, Milfrid	A troublesome transition: Social reintegration of girl soldiers returning ‘home’
	Senneseth, Mette	Improving social network support for partners facing spousal cancer while caring for minors. A randomized controlled trial.
	Urke, Helga Bjørnøy	Child health and child care of very young children in Bolivia, Colombia and Peru.
	Bakhturidze, George	Public Participation in Tobacco Control Policy-making in Georgia
	Fismen, Anne-Siri	Adolescent eating habits. Trends and socio-economic status.
2017 H	Hagatun, Susanne	Internet-based cognitive-behavioural therapy for insomnia. A randomised controlled trial in Norway.
	Eichele, Heike	Electrophysiological Correlates of Performance Monitoring in Children with Tourette Syndrome. A developmental perspective.
	Risan, Ulf Patrick	Accommodating trauma in police interviews. An exploration of rapport in investigative interviews of traumatized victims.
	Sandhåland, Hilde	Safety on board offshore vessels: A study of shipboard factors and situation awareness
	Blågestad, Tone Fidje	Less pain – better sleep and mood? Interrelatedness of pain, sleep and mood in total hip arthroplasty patients
	Kronstad, Morten	Frå skulebenk til deadlines. Korleis nettjournalistar og journaliststudentar lærer, og korleis dei utviklar journalistfagleg kunnskap
	Vedaa, Øystein	Shift work: The importance of sufficient time for rest between shifts.
	Steine, Iris Mulders	Predictors of symptoms outcomes among adult survivors of sexual abuse: The role of abuse characteristics, cumulative childhood maltreatment, genetic variants, and perceived social support.
	Høgheim, Sigve	Making math interesting: An experimental study of interventions to encourage interest in mathematics

2018 V	Brevik, Erlend Joramo	Adult Attention Deficit Hyperactivity Disorder. Beyond the Core Symptoms of the Diagnostic and Statistical Manual of Mental Disorders.
	Erevik, Eilin Kristine	User-generated alcohol-related content on social media: Determinants and relation to offline alcohol use
	Hagen, Egon	Cognitive and psychological functioning in patients with substance use disorder; from initial assessment to one-year recovery
	Adólfsdóttir, Steinunn	Subcomponents of executive functions: Effects of age and brain maturations
	Brattabø, Ingfrid Vaksdal	Detection of child maltreatment, the role of dental health personnel – A national cross-sectional study among public dental health personnel in Norway
	Fylkesnes, Marte Knag	Frykt, forhandlinger og deltakelse. Ungdommer og foreldre med etnisk minoritetsbakgrunn i møte med den norske barnevernstjenesten.
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