

Oda Nissen
David Aleksander Nilsen

Who Returns to Work?

Exploring the Role of Interpersonal Problems in
Occupational Rehabilitation

Graduate thesis in clinical psychology
Supervisor: Tore Stiles, Trond Nordfjærn
January 2020

Oda Nissen
David Aleksander Nilsen

Who Returns to Work?

Exploring the Role of Interpersonal Problems in
Occupational Rehabilitation

Graduate thesis in clinical psychology
Supervisor: Tore Stiles, Trond Nordfjærn
January 2020

Norwegian University of Science and Technology
Faculty of Social and Educational Sciences
Department of Psychology



Forord

Denne hovedoppgaven bygger på data samlet inn i 2012-2013 via Hysnes Helsefort, et kombinert arbeidsrettet rehabiliteringsprogram og forskningsprosjekt underlagt St. Olavs Hospital. Oppgaven er skrevet som en kvantitativ studie, men vi opplever at vel så viktig som de statistiske funnene, er den sentrale idéen om å kombinere to fagfelt: Interpersonlig psykologi og arbeidsrettet rehabilitering.

I arbeidet med å sette seg inn i den omfattende litteraturen på begge disse feltene, trekke paralleller og bygge forståelse mellom dem, har det vært uvurderlig å være to om jobben. Vi har samarbeidet tett om alle deler av oppgaven: Idéfase, litteratursøk, bearbeiding av det omfattende datasettet, statistikkarbeid og alle deler av tekstproduksjonen. Gjennom tolv måneder med sene kvelder, høye litteraturstabler og ivrig diskusjon på lesesalen har vi tilegnet oss kunnskap som vil bidra til å forme oss som både mennesker og klinikere i årene framover.

Det har vært planen fra start å få denne oppgaven publisert som en artikkel i et internasjonalt tidsskrift, og dette har lagt føringer for språk og format vi har brukt i oppgaven. Denne avgjørelsen er i tråd med NTNUs retningslinjer for utforming av hovedoppgave, som oppfordrer til at oppgaven bør skrives i en format som gjør at den kan bli kommunisert til interesserte brukere – og også i tråd med entusiastiske anbefalinger fra alle som har hjulpet oss med arbeidet.

Spesifikt ønsker vi å få oppgaven publisert i et tidsskrift som fokuserer på arbeidsrettet rehabilitering, der målgruppen i stor grad har andre fagbakgrunner enn psykologi. Vi har derfor med overlegg beskrevet en del terapi-relaterte begreper (som allianse og egosyntone/-dystone vansker) i mer detalj enn vi ville gjort dersom vi skrev for kliniske psykologer.

Siden artikkelformatet er såpass kortfattet, har vi i tillegg valgt å inkludere en teoridel (*Background and theoretical framework*), som kommer mellom introduksjon og metode. Denne delen går i dybden og bredden på de fleste tema fra introduksjonen. Av praktiske hensyn er det derfor noe overlapp mellom introduksjons- og teoridelen, da oppgaven er skrevet for å stå på egne ben uten teoridelen.

Vi ønsker å rette en stor takk til vår hovedveileder Tore Stiles. Uten hans uvurdelige erfaring og innsikt i både interpersonlige vansker, arbeidsrettet rehabilitering og akademisk

skrivekunst, ville denne oppgaven ikke blitt noe av. Stor takk også til biveileder Trond Nordfjærn for grundige og gode svar til alle døgnets tider på spørsmål om statistikk og språk. Takk fortjener også Karen Walseth Hara, Astrid Woodhouse, Eli Alperstein, Henrik Børsting Jacobsen og Truls Ryum fra fagmiljøet rundt Hysnes-prosjektet for verdifulle innspill, og familie og venner for støtte, oppmuntring og tålmodighet.

Trondheim, januar 2020

Oda Nissen

David Aleksander Nilsen

Table of Contents

Forord.....	i
Abstract	v
Introduction.....	1
Background and theoretical framework.....	5
Long term sick leave.....	5
Reasons for sick leave and disability	6
Returning to work.....	7
Social factors in RTW	8
Interpersonal psychology	10
Interpersonal problems.....	12
Interpersonal problems and personality disorders	14
Hostile-dominant interpersonal problems	15
Treatment of interpersonal problems.....	17
Method	19
Design and procedures	19
Assessments.....	20
Statistical procedures.....	22
Results.....	25
Sample characteristics	25
Hypothesis testing.....	27
Discussion.....	31
Implications	35
Strengths and limitations.....	36
Future directions	37
Conclusion	38
References.....	39
Appendix A: Questionnaires used in the study.....	47
Appendix B: Interpersonal problems in the study population.....	55

Abstract

Background: Current interventions to facilitate return to work (RTW) after long-term sick leave show weak effects, indicating the need for new approaches to the RTW process. The importance of social relationships in the workplace is widely recognized in existing RTW literature, but virtually no studies exist on the role played by the *interpersonal problems* of the returning worker. Current research indicates that a subset of these – *hostile-dominant interpersonal problems* – give particular disadvantages in several life areas.

Aims: This prospective cohort study aims is to test if (H1) higher levels of interpersonal problems pre-admission predict lower likelihood of RTW in the year following occupational rehabilitation, independently of symptom levels; if (H2) higher levels of hostile-dominant interpersonal problems specifically predict such an effect; and whether (H3) any significant associations found in H1 and H2 are weakened when controlling for changes in relational impairment.

Methods: 189 patients on long-term sick leave completed a 3½-week transdiagnostic RTW programme. Before treatment, self-reported interpersonal problems, relational impairment, chronic pain, common psychological problems, insomnia and fatigue levels were collected. RTW data for the following year was collected from the Norwegian Labour and Welfare Administration.

Results: Three logistic regression analyses found that (H2) hostile-dominant interpersonal problems significantly predicted RTW (AOR 0.618, 95% CI 0.41-0.93, $p < .05$), while (H1) general interpersonal problems did not. (H3) Changes in relational impairment during the rehabilitation stay had no impact on the strength of the relationship.

Conclusion: Hostile-dominant interpersonal problems negatively predict RTW after long-term sick leave, indicating a potentially overlooked factor in the field of occupational rehabilitation. The findings could help improve future research, intervention design and focus.

Introduction

Long-term sick leave incurs significant economic and social costs on individuals, families, workplaces and society at large (OECD, 2010). Facilitating effective and lasting return to work (RTW) after long-term sick leave is the primary goal in the field of occupational rehabilitation. A particular challenge in this field is helping patients with *subjective health complaints*. These complaints are characterized by symptoms with no clear biological markers, and medical investigation offers few objective findings (Mæland et al., 2012). The main groups of subjective health complaints – musculoskeletal and mental disorders – are the cause of the majority of both sick leave cases and sick leave days in Norway (Norwegian Health and Welfare Service, 2019, December 5).

In recent decades, the field of occupational rehabilitation has seen a gradual shift from a biomedical to a biopsychosocial understanding of disability (see Engel, 1977). Instead of a narrow focus on individual medical impairment, the field now considers the interactions between medical, psychological, psychosocial and system-based factors to understand and improve the RTW process (Knauf & Schultz, 2016). Such a shift encourages transdiagnostic explanations and interventions, which is of particular interest when treating subjective health complaints, where diagnoses are of questionable utility (Mæland et al., 2013). For these patients, comorbidity is the rule rather than the exception – both when it comes to general comorbidity (see Hara, Borchgrevink, et al., 2018) and within mental disorders (see R. Hagen, Johnson, Rognan, & Hjemdal, 2012). Comorbidity does not necessarily reflect multiple underlying problems. It could also indicate that one is investigating the problem at the wrong level (R. Hagen et al., 2012).

Symptom improvement was once thought to be a necessary and sufficient prerequisite of RTW. Recent meta-analyses strongly challenge this view, indicating that symptom improvement plays a rather minor role in this process, particularly in the case of subjective health complaints (Cancelliere et al., 2016; Finnes et al., 2019). Additionally, symptom improvement often follows RTW instead of preceding it (Becker, Whitley, Bailey, & Drake, 2007; Rueda et al., 2012). A comprehensive study of the Norwegian sick leave system by SINTEF mirrors this, raising the following question as part of its conclusion: “*Why do people not return to work when they are well enough to do so?*” (Ose et al., 2013, p. 297). It seems abundantly clear that symptom improvement is not the solution to the RTW puzzle - other factors are deciding who returns to work.

In the last couple of decades, an extensive research effort has been made to identify these factors affecting RTW. While numerous factors have been identified, the literature stresses that the psychosocial domain has received relatively little attention compared to, for example, research on workplace accommodations (Kwan & Schultz, 2016). Two particular areas of the psychosocial domain are singled out as being under-studied, yet important: Individual dispositions (Henderson, Harvey, Øverland, Mykletun, & Hotopf, 2011), and the importance of social relations in the workplace (Tjulin & MacEachen, 2016).

The present study will address both individual dispositions and social relations, by focusing on the area where these two overlap: The field of interpersonal psychology, and in particular, the concept of *interpersonal problems*.

Interpersonal problems are relatively stable individual dispositions that affect social functioning. They can be differentiated along underlying dimensions of dominance vs. submissiveness and hostility vs. friendliness (Alden, Wiggins, & Pincus, 1990; Horowitz, 1979; Leary, 1957). As an example, someone with friendly-submissive interpersonal problems might have a hard time expressing anger or disagreeing with others, and try so hard to please that they create problems for themselves. All types of interpersonal problems are frequently reported by psychiatric patients (Bjerke, Hansen, Solbakken, & Monsen, 2011; Horowitz, 1979, 2004) and are thought to be significant contributors to many mental disorders (Horowitz, 2004; Karterud, Wilberg, & Urnes, 2017).

No studies, to our knowledge, has yet examined the connection between interpersonal problems and RTW. It is generally poorly investigated outside of the field of clinical psychology, which is surprising considering the importance of social relations in all domains of life. Frone (2000) argues that interpersonal problems are the most common sources of unhappiness in people's lives.

There are several reasons to examine the connection between interpersonal problems and RTW in particular. First, recent literature on RTW stresses the importance of good social relations in the workplace, and how it is an important predictor of successful and enduring RTW (Tjulin & MacEachen, 2016). A review of interventions aimed at facilitating good relationships in the workplace (Schultz, Krupa, & Rogers, 2011) include "sensitivity training" for employers and co-workers, but curiously mentions no equivalent interventions targeting the returning worker.

Second, the importance of personality factors should not be underestimated. Returning to work is a “complex behaviour in which individual perceptions, beliefs and decisions are crucial” (Henderson et al., 2011, p. 199). In an RTW context, most of these perceptions, beliefs and decisions will involve other people in some way – and interpersonal psychology can help us understand individual differences in this area.

Third, holding a job means cooperating and interacting with others. The most detailed knowledge available on the mechanisms of human connection and cooperation is arguably found in the field of psychotherapy research. In this tradition, the *therapeutic alliance* is a core term, referencing the bond of trust and cooperation between therapist and client (Bordin, 1979). Independently of the theoretical framework or type of treatment used, the therapeutic alliance consistently appears as the most robust predictor of outcome of therapy (Castonguay, Constantino, Boswell, & Kraus, 2010; Martin, Garske, & Davis, 2000; Safran & Muran, 2000), and an important predictor of the quality of this alliance is interpersonal problems (Castonguay et al., 2010; Connolly Gibbons et al., 2003). Crucially, the phenomenon of alliance is not limited to therapeutic relationships – it influences every relationship, including those in the workplace. These arguments form the rationale for our first hypothesis (H1).

Our second hypothesis (H2) concerns a specific subtype of interpersonal problems, characterized by high hostility and dominance. These styles seem to have particularly adverse outcomes on relationships (Jones & Paulhus, 2012), and might, therefore, be detrimental to successful RTW. People with high levels of hostile-dominant interpersonal problems (HDIP) are typically characterized as controlling, suspicious, vindictive and cold, which can provoke inferiority, distrust and uncertainty in others (Alden et al., 1990; Leary, 1957). Paranoid, narcissistic and dissocial personality disorders are characterised by severe HDIP (Horowitz, 2004; Jones & Paulhus, 2012), and are known to cause more problems at the workplace than other personality disorders (Ettner, 2011). In psychotherapy research, where HDIP have been studied the most, there is a trend that patients with high levels of HDIP have a poorer therapeutic alliance than patients with other interpersonal problems, resulting in poorer outcome of therapy (Cookson, Daffern, & Foley, 2012; Howard, Turner, Olkin, & Mohr, 2006; Muran, Segal, Samstag, & Crawford, 1994).

Hostile and dominant styles are, almost by definition, linked to interpersonal conflict and hostility, the logical opposite of good relationships. Workplace conflict is a major and growing

problem in organizations, and is a strong predictor of stress, burnout, subjective health complaints and eventual sick leave (de Dreu, Van Dierendonck, & Dijkstra, 2004; Jaramillo, Mulki, & Boles, 2011). For these reasons, we expect HDIP in particular to impede RTW.

Interpersonal problems can be improved through psychotherapy (McFarquhar, Luyten, & Fonagy, 2018; Rosenthal, Muran, Pinsky, Hellerstein, & Winston, 1999), making it a modifiable factor. Such factors are of greater interest in RTW research than static factors like gender, since interventions can target them for change (Cancelliere et al., 2016; Eftedal, Kvaal, Ree, Øyeflaten, & Mæland, 2017). Overlapping with the concept of interpersonal problems is the more narrow construct of *relational impairment*: The ability to form and maintain relationships. Our third hypothesis (H3) concerns changes in relational impairment as a function of rehabilitation. If interpersonal problems do indeed predict RTW, we would expect reduction in relational impairment to translate to higher chances of RTW.

This paper aims to explore this connection between interpersonal problems and RTW using data from Hysnes Helsefort, a 3.5-week transdiagnostic occupational rehabilitation program based on acceptance and commitment therapy (ACT). The numerous clinical measures taken on the study population enables exploring fairly specific effects and interactions. Specifically, the following hypotheses will be tested:

- H1: Higher levels of interpersonal problems pre-admission predict a lower likelihood of RTW in the year following occupational rehabilitation, independently of symptom levels.
- H2: Higher levels of hostile-dominant interpersonal problems specifically predict such an effect.
- H3: A reduction in relational impairment from pre- to post-rehabilitation weakens potential significant associations found in H1 and H2.

Background and theoretical framework

Long term sick leave

The level of sick leave in Norway has been virtually unchanged for the last five years and currently stands at 5.9% (Statistics Norway, 2019). Although comparison between countries is methodologically difficult for a variety of reasons, sick leave in Norway seems to be among the highest in Europe. According to the Eurostat Labour Force Survey, a solid and standardised measure of sick leave, the Norwegian sick leave numbers are higher than all other European countries by a large margin – even when controlling for the effects of different compensation systems (Gleinsvik, Staalesen, & Mastekaasa, 2014).

Sick leave has significant costs for both society and individuals. Under the Norwegian system, the direct costs for covering sick pay are split between employers (first 16 days) and the state (any sick leave exceeding 16 days; Norges lover, 1997). The state's portion of sick leave totals 37.5 billion NOK annually, in addition to 34.8 billion NOK in work assessment allowance (AAP) and 86.5 billion NOK in disability benefits. A national study (Hem, 2011) showed that in addition to the direct sick leave payment, employers face an additional cost of 13 000 NOK per week in extra expenses associated with sick leave. Furthermore, employers rate the non-economic effects of sick leave as even more important than this extra cost – such as the extra pressure on remaining co-workers, and administrative work (Hem, 2000).

In addition to the workplace and societal aspects, sick leave is associated with a multitude of problematic outcomes for the affected individual, both short- and long term. Naturally, the impairment in question is a problem in its own right, but being away from work seems to have many negative consequences in and of itself – lending credibility, perhaps, to the old saying “idleness is the root of all evil”. Longer periods of sick leave is associated with lower chances of symptom reduction and return to previous levels of activity (Marhold, Linton, & Melin, 2001), and the chance of returning to work is significantly reduced if sick leave exceeds three months (Gatchel & Turk, 1996; Marhold et al., 2001) – irrespective of whether the sick leave in question is somatic, mental or, as in many cases, both.

A Swedish study examined the effects of sick leave on the patient's life situation. Although causality is hard to establish, the results are striking: Workers on sick leave have overall worse outcomes when it comes to social and family life, leisure activities, sleep, food habits, exercise, self-image, psychological well-being, and several other factors (Floderus,

Goransson, Alexanderson, & Aronsson, 2005). Getting back to good health and returning to work are two different goals, and the latter often precedes the former (Rueda et al., 2012). In fact, it seems like getting back to work sooner rather than later is among the more effective ways of improving health outcomes.

To sum up: It is in everyone's interest – the individual, the family, employer, co-workers, and society at large – to offer targeted and effective occupational rehabilitation interventions to people on sick leave. In the following section, we will examine the population on long term sick leave.

Reasons for sick leave and disability

Musculoskeletal disorders are by far the largest single cause for sick leave in Norway, accounting for 38% of sick leave days. The second largest group is mental health problems, accounting for at least 21% - probably more, when correcting for the known under-reporting in this category (Norwegian Health and Welfare Service, 2019, December 5). Beyond these two major groups, a multitude of somatic conditions make small and roughly equal contributions to the remaining reasons for sick leave. Women are overrepresented in the number of individual sick leave cases, but men tend to stay on sick leave for longer periods (Statistics Norway, 2019). Diagnosis wise, men have more musculoskeletal disorders, while women have more mental health problems and pregnancy-related conditions.

Considering trends in causes for disability (permanent inability to work) also provides a perspective on where the need for better interventions is most pressing. Mental illness is on the rise as a reason for disability as well as sick leave, especially among young people, and new cases of disability for this reason have increased dramatically in recent years (Brage & Thune, 2015). Mental health problems are given as the main reason for 63% of new cases among young people (18-29) and 35% of the cases in the general population. Over the last decade, mental and behavioural disorders have become the most common reason for new disability claims, in spite of prevalence rates not having increased correspondingly (Reme, Grasdahl, Løvvik, Lie, & Øverland, 2015).

Under the current system, Norwegian general practitioners - and hence, statisticians – need to attribute individual sick leave to a single cause. Registration of secondary and tertiary diagnoses is possible (Mæland et al., 2012), but these nuances often get lost when discussing

diagnoses on a group level – such as with the numbers cited above. Available statistics are therefore likely to underestimate both prevalence and comorbidity levels of many disorders. Take the example of back pain, which alone accounts for over 9% of total sick leave. One study on a population with low back pain showed that 98% of participants reported other health complaints, with both mental and physical symptoms highly prevalent (E. M. Hagen, Svensen, Eriksen, Ihlebæk, & Ursin, 2006). Within the field of mental health, comorbidity is also the rule rather than the exception (First, 2005).

Returning to work

Contrary to the impression one gets from reading statistics, sick leave is a heterogeneous and complex phenomenon; comorbidity is high and underlying causes are multifaceted and often hard to pin down. The conceptual framework we use to understand sickness and disability affects how we understand the process of returning to work (RTW), and how we design interventions to get patients well and back to work. In spite of the significant body of research and literature on how to get people to RTW, current interventions seem to have little to no demonstrable effect, and there is no “gold standard” (Mikkelsen & Rosholm, 2018).

For a long time, the dominating model for understanding sickness and disability was the biomedical model. Within this framework, disability is understood as “*a product of a medical condition that is an identified, observable deviation from biomedical norms of function or structure*” (Knauf & Schultz, 2016, p. 27). Treating disability is thus done by targeting the underlying injury or disease, while social context and environmental factors are not considered important. The biomedical model is still prevailing in research and practice of acute health care, but is no longer considered sufficient for understanding disability or sick leave (Knauf & Schultz, 2016). A modern understanding of sick leave, RTW and disability includes biopsychosocial perspectives (Knauf & Schultz, 2016): Considering not only medical, physiological and injury-related issues, but also psychological, psychosocial and societal factors. In other words, potential predictors, mediators and moderators need to be investigated and identified across different domains. The aim of identifying these factors is 1) to identify patients with a higher risk of long-term disability, and 2) to identify modifiable factors leading to successful RTW. This way, measures can be taken to change factors that hinder certain patients in their RTW process. Improved targeting will yield more efficient and effective interventions.

So far, a large number of factors from different domains have already been identified in the search for RTW predictors, confirming that this is a multifactorial phenomenon (Gross, Bostick, & Carroll, 2016). Personal factors include age and sex. Psychological factors include recovery expectations, catastrophizing, fear of movement and perceptions of injustice. Condition- or injury-specific factors include injury severity, level of reported pain or disability, and pain behaviour. Socioeconomic factors include low income and availability of healthcare and worker's compensation. Workplace factors include the type of job, physical demands, availability of modified duties (see Gross et al., 2016 for an overview). Findings vary widely and are often contradictory, even between meta-analyses (Cancelliere et al., 2016; Cornelius, van der Klink, Groothoff, & Brouwer, 2011; Finnes et al., 2019; Mikkelsen & Rosholm, 2018).

Despite apparent improvement in this field of research, we have already seen that the levels of sick- and disability leave in Norway are strikingly high, with a correspondingly high cost to both society and individuals. It is imperative to continue the search for other modifiable factors that affect RTW success rates.

The field of occupational rehabilitation spans many disciplines, and the RTW process involves several stages, each with multiple arenas and different stakeholders (Tjulin, Maceachen, & Ekberg, 2010). Steps in this process include early contact with employer and RTW coordinators, contact with various health care services and training programmes, and reintegrating in the workplace. Common to all these processes is not only the central role of the returning worker themselves, but also that they are affected by a wide range of social factors, which we now turn to.

Social factors in RTW

In most jobs, we interact with co-workers, superiors, clients or customers, and social interaction is often inseparable from work tasks. The workplace is a dynamic and demanding social setting, and as technology and automation removes the more menial jobs, today's workers must master an ever-increasing number of different tasks and social roles. This puts a high demand on both cognitive and social flexibility, even before sick leave enters the picture (Bessen, 2016). Returning to work after sick leave adds even more complexity to this social landscape, as the (re)integration into the workplace environment comprises varied interaction with co-workers, from receiving social support to handling the narrative of one's own absence,

and often also (re)negotiating responsibility of specific work tasks with co-workers – both formally and informally (Tjulin et al., 2010). In addition to the aspects at the workplace, the returning worker has to manage contact and cooperation with various other stakeholders in the process, including medical professionals, family and friends, RTW coordinators, etc. Successful RTW could depend on the success of all these social aspects and relationships, and yet, they have largely been overlooked in the RTW literature (Henderson et al., 2011; Tjulin & MacEachen, 2016).

Current research on social aspects of sick leave has focused less on determinants of RTW and more on risk factors for long-term sick leave. We will briefly address them here, since they are conceptually similar. These risk factors include bullying, interpersonal conflict (Appelberg, Romanov, Heikkilä, Honkasalo, & Koskenvuo, 1996; Nielsen, Emberland, & Knardahl, 2017), role conflict, high emotional demands, low supportive leadership (Rugulies, Aust, & Pejtersen, 2010; Aagestad, Johannessen, Tynes, Gravseth, & Sterud, 2014), social dysfunction and social isolation (Steenstra, Verbeek, Heymans, & Bongers, 2005). However, a recent meta-analysis on the contribution of psychological, social and organizational work factors to risk of disability leave, only demonstrated robust findings for psychological factors (control and job demands), and mixed findings regarding the role of the social factors, conflicts, team climate and social support (Knardahl et al., 2017). The mixed findings might reflect methodological differences between studies, and the difficulty of predicting such a multifactorial phenomenon as work functioning (Gross et al., 2016)

Throughout the literature on RTW, one point keeps getting repeated: There is not enough knowledge on the exact mechanisms affecting who returns to work (Cancelliere et al., 2016; D'Amato & Zijlstra, 2010), with knowledge especially lacking in the psychosocial domain (Aylward, 2016; Tjulin & MacEachen, 2016) – in spite of existing reviews consistently pointing to the social environment and relationships at work as important factors (Aylward, 2016; Friesen, Yassi, & Cooper, 2001; Knardahl et al., 2017; Lagerveld et al., 2010; Ose et al., 2013).

Clearly, the most important “social factor” in an RTW process is the person who returns to work. It is therefore strange that current literature on occupational rehabilitation mainly seems to regard the returning worker as a static figure, mostly affected by outside influences: their illness, social circumstances, and so on. From a psychological perspective, it is obvious that individual differences also contribute to how someone handles the practical and social aspects of

a difficult endeavour such as returning to work after long-term sick leave. Differences in self-image, emotionality and cognitions are all central to understand differences in behaviour and reactions.

Having identified both individual differences and social factors as areas of interest in RTW research, we now turn to the area of overlap between these two, between personality psychology and social psychology – the field called *interpersonal psychology*. The next sections will provide a thorough introduction to this field, and argue that this perspective can help us understand the challenges of returning to work.

Interpersonal psychology

Humans are social animals, and social skills have been essential for adaptation and survival in our socially complex societies. Our ability to interact with and understand others is therefore of clear evolutionary priority. These skills have a neuropsychological basis, and start developing early in life through attachment processes and infant-caregiver interactions (Urnes & Urnes, 2018). One of the ways these phenomena have been studied is through attachment patterns, first researched by John Bowlby in the 1960s and '70s. Attachment is formed in early interactions with the child's primary caregiver and has been shown to remain relatively stable throughout life (von Tetzchner, 2012). Social development and cognition have also been thoroughly studied under different terms as part of other traditions, such as object relations, theory of mind, empathy and mentalizing (Urnes & Urnes, 2018).

The term *interpersonal psychology* was introduced by Harry Sullivan as a reaction to the dominating psychological schools of psychoanalysis and behaviourism in the '50s. Psychoanalytic theory emphasized intrapsychic drives as motivators for behaviour, while behavioural psychology reduced behaviour to mere stimulus-response interactions. Sullivan understood behaviour to be motivated by goals, and pointed out that these goals often involve other people. This is reflected in his definition of personality; "the characteristic ways in which a person interacts with others" (H. S. Sullivan, 1950). Leary and colleagues (1957) developed a personality model based on Sullivan's interpersonal theory, the Interpersonal Circumplex (IPC), which has since been revised and changed by several researchers and is under continuous development. Even so, virtually all contemporary researchers and theorists agree on the basic structure of the circumplex, consisting of two underlying dimensions which are commonly

labelled *agency* and *communion* (Fournier, Moskowitz, & Zuroff, 2010; Horowitz, 2004; Leary, 1957). Figure 1 shows a simplified illustration of the IPC.

The communal (horizontal) dimension describes behaviour or motivation concerning warmth and connectedness to others. A person on the left end of this spectrum could be defined as hostile, detached or cold, and someone on the right end as friendly or warm.

The concept communion is recognizable in other fields of social science as well, such as describing societies as being more or less collectivistic, and it corresponds to attachment behaviour of the infant towards a caregiver when seeking safety. The agentic (vertical) dimension describes the motivation for autonomy and control. A person at the upper end of the spectrum would be seen as dominant, and someone on the other end as submissive. This behavioural dimension also starts developing in early infancy, with the individuation process of the child. Agentic motivations are perhaps more valued in individualistic societies.

All social behaviour, motivations or problems can be placed on an intersection between the two axes of the IPC. Because of the circumplex nature of the model, constructs located near each other are conceptually and statistically similar, constructs located on a right angle from each other are unrelated, and constructs located opposite each other are opposites (Fournier et al., 2010).

According to this model, every interpersonal behaviour has a relational motive, either conscious or not. Motives can be communal, such as getting closer to someone else, or agentic, like achieving status or influencing others. Every behaviour also invites a *complementary* response from someone else. Domineering behaviour invites others to follow the lead of the domineering person. Submissive behaviour, on the other hand, invites someone else to take charge of the situation. The behaviour and wanted response are therefore complimentary. Complimentary behaviours correspond on the communion-axis, being equally warm or distant, but are opposites on the agency-dimension. Responses that are not complimentary also frequently occur, but such responses will obstruct or *frustrate* the original motive. An example would be if dominant behaviour is met with more dominant behaviour. The result is tension and negative affect – in this case, anger is likely to ensue.

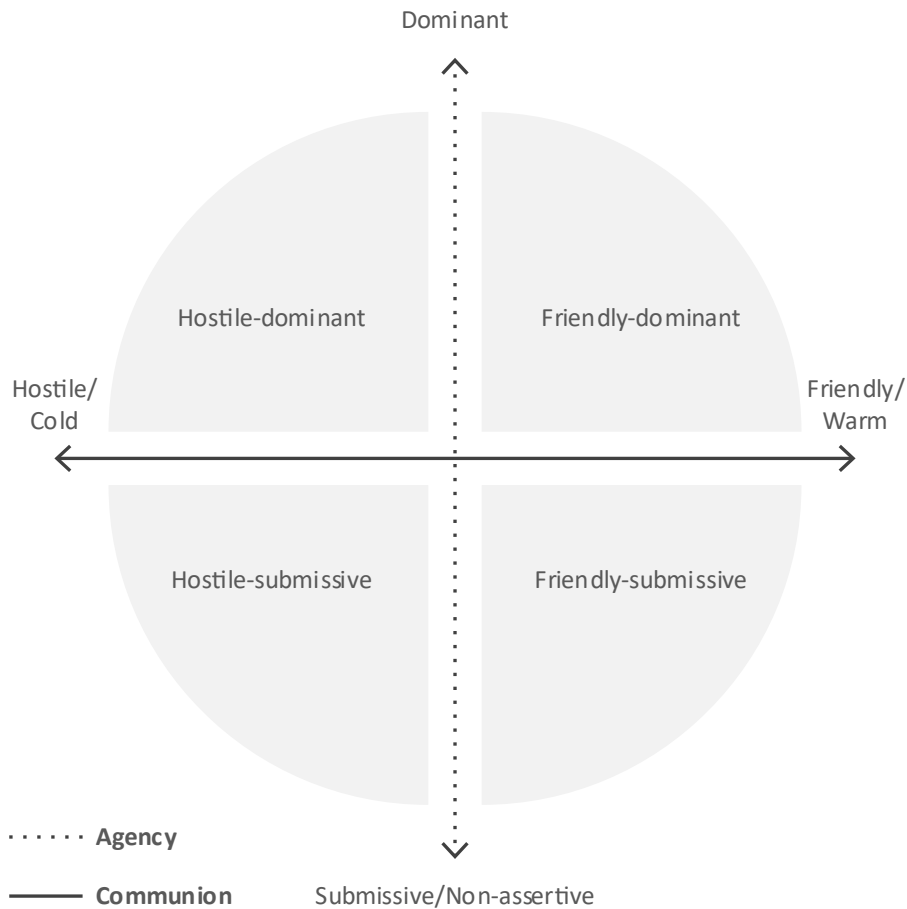


Figure 1. Simplified illustration of the Interpersonal Circumplex

Interpersonal problems

Interpersonal styles are part of our personality, formed by gene-environment interactions and learning throughout life. Interpersonal motives that constantly are frustrated can be described as interpersonal problems (Horowitz, 2004). They are, in essence, maladaptive interpersonal strategies that sometimes develop into vicious cycles.

Horowitz recognized that psychiatric patients commonly reported interpersonal problems, and started collecting data on these problems through intake interviews to the clinic. The reported problems were classified into semantic categories, and were further investigated to find underlying styles and dimensions. The result was the Inventory of Interpersonal Problems (IIP - 127), an inventory to classify types of interpersonal problems, later developed into the shorter version IIP-64 (Alden et al., 1990; see also Appendix A). IIP-64 is widely used today to measure

interpersonal problems associated with various forms of psychopathology (Karterud et al., 2017; Locke, 2010). These interpersonal problems can be categorized into eight different types which can be mapped onto the IPC. They all correspond to the same underlying dimensions of agency (too submissive vs. too domineering) and/or communion (too hostile vs. too friendly; Horowitz, 1979; Horowitz, French, Gani, & Lapid, 1980; Horowitz, Rosenberg, Baer, Ureño, & Villaseñor, 1988).

In the book *Interpersonal Foundations of Psychopathology*, Horowitz (2004) argues that all psychiatric symptoms have interpersonal functions, and understanding the underlying interpersonal problem is essential to treating the symptom. For example self-starvation, a symptom of anorexia nervosa, could in some individuals be motivated by a need to affirm a sense of control (an agentic motive), and in others be motivated by a need to feel loved, nurtured and protected (a communal motive).

The interpersonal problems are often grouped into the four quadrants of the IPC, yielding more overarching categories of interpersonal problems: Hostile-dominant, hostile-submissive, friendly-submissive and friendly-dominant. Characteristic interpersonal problems located in the *hostile-dominant* quadrant include being too aggressive and controlling; manipulating or exploiting others too much; criticizing, arguing or fighting others too much; having difficulties with authority; being too suspicious of others; finding it hard to feel empathy, support or care for others; and finding it hard to make commitments to others. The *hostile-submissive* style involves finding it hard to feel close, show affection or express admiration for others; to feel comfortable around others or tell others personal things; to make friends or socialize; to join in on groups or introduce oneself to others; and to feel self-confident, express one's own needs or be assertive. On the opposing, right-hand side of the circumplex, *friendly-submissive* interpersonal problems involve finding it hard to be aggressive, express anger, feel superior, be firm, set limits, say no, compete or disagree with others; being too easily persuaded, influenced by others or taken advantage of; being too gullible or place others needs ahead of one's own; and being too affected by others' moods or trying to please others too much. *Friendly-dominance* involves being overly responsible; finding it hard to be alone; being overly revealing or self-disclosing; wanting too much to be noticed, admired or approved of by others; and trying too much to change others.

Interpersonal problems and personality disorders

It is not surprising that interpersonal problems can be devastating and give rise to different forms of psychopathology. One way to better understand the effects of interpersonal problems is to consider the diagnostic category of personality disorders (PDs). In the diagnostic manual DSM-5, personality disorders are described as “pervasive, inflexible, and enduring patterns of inner experiences and behaviour that can lead to clinically significant distress or impairment in social, occupational, or other areas of functioning” (American Psychiatric Association, 2013, p. 645). Several theorists have pointed out that PDs are essentially defined as severe and inflexible patterns of interpersonal problems (Karterud et al., 2017; Monsen, Hagtvet, Havik, & Eilertsen, 2006), and as such, they can be regarded as amplified descriptions of the various interpersonal problems everyone has to some degree.

PDs manifest in childhood or adolescence and persist through adulthood. Horowitz (2004) explains how the various personality disorders can be understood in terms of frustrated interpersonal motives. For example, both avoidant and dependent PD are characterized by feelings of incompetence (submissiveness), but they have distinctly different strategies to protect their vulnerable sense of self. In avoidant PD, the person strives to protect himself from shame and criticism by avoiding others (hostility), while the dependent person has a strategy of connecting to competent caretakers (friendliness) to compensate for feelings of insufficiency. Interpersonal problems, like personality disorders, can be treated through psychotherapy, which we will return to later.

PDs are defined by impairment in functioning, including occupational functioning specifically. While interpersonal problems have not yet been studied in relation to work, studies have looked at the effect of PDs on labour markets, work and career outcomes, as well as the impact individuals with PDs have on the workplace. Several studies have associated PDs with more sick leave and chronic unemployment, regardless of other health complaints (Ettner, Maclean, & French, 2011; Lim, Sanderson, & Andrews, 2000; Reich, Yates, & Nduaguba, 1989; Soeteman, Roijen, Verheul, & Busschbach, 2008), and lower pay grade and less career advancement (Gundersen & Hourani, 2003). Individuals with PDs also report having more trouble with superiors or co-workers (Ettner et al., 2011), and they have been found to have a destructive impact on well-being of co-workers (Trimpey & Davidson, 1994), turn-over in the

workplace and productivity (Babiak, 1995; de Vries & Miller, 1985), amongst other consequences. For a comprehensive review of available literature, see Ettner (2011).

Consequences of PDs, both for the affected individuals and their environments, naturally vary depending on the severity and type of PD. Interpersonal problems are not necessarily severe enough to warrant a PD, but PD traits that do not meet the diagnostic threshold can also cause similarly impaired functioning (Skodol et al., 2002). Given the high social demands in the workplace, it is then safe to assume that interpersonal problems cause impairment at work, and specifically – as is the focus of this paper – in the RTW-process.

Hostile-dominant interpersonal problems

Certain interpersonal problems have particularly severe consequences for the individual, their lives and people around them. In line with the findings on PDs, we argue that hostile-dominant types of interpersonal problems have more evident consequences, also in the workplace, than the other types. Several personality disorders and related constructs can be theoretically located within the hostile-dominant quadrant, including paranoid and dissocial PD (Horowitz, 2004), and the so-called “Dark Triad” of personality: Machiavellianism, narcissism and psychopathy (Jones & Paulhus, 2012). To illustrate the severity and consequences of this category of interpersonal psychopathology, we will briefly consider paranoid, dissocial and narcissistic PD from the ICD and DSM diagnostic systems respectively.

Paranoid PD is characterized by a pervasive distrust and suspiciousness of others. People with this diagnosis have a vulnerable self-image, a vigilant attentional style and a strong need for control. When they perceive that they are attacked or manipulated, they react angrily or counterattack. They have a lower income than others, and are less successful both in their careers and their close relationships (Karterud et al., 2017). Horowitz (2004) points out that people with paranoid PD often get involved in legal disputes, have difficulties relating to authority figures and co-workers, and often seem cold and rejecting to others.

Dissocial PD is both very dominant and very hostile in character: it involves a disregard of others and of social norms. Several diagnostic criteria concern problems of social character, like “callous unconcern for the feelings of others”, “difficulties maintaining longer relationships” and a “marked tendency to blame others”. Narcissistic PD is characterized by grandiosity, need

for admiration and lack of empathy (Karterud et al., 2017). It corresponds to very high dominance and lack of warmth if not hostility.

All three personality disorders seem to be associated with reduced empathy and difficulties with affect regulation, resulting in strong reactions like rage. Social consequences are many and evident. They also have externalizing styles, meaning they blame other people for failure, and as a result, they burden others as much as themselves. Ettner (2011) points out that management literature has focused largely on cluster B PDs (antisocial, borderline, histrionic and narcissistic, DSM-V), exactly because these seem to cause more problems in the workplace. There are, therefore, strong reasons to believe that the related category of hostile-dominant interpersonal problems is particularly problematic in the workplace, and further that these styles obstruct return to work after long-term sick leave.

Psychotherapy research provides further arguments for why interpersonal problems, and particularly the hostile-dominant kind, are likely to impede the RTW process. This is probably the field where interpersonal problems have been studied most closely, especially in terms of their effects on the *therapeutic alliance*. This term describes the nature of the relationship between therapist and patient, and the agreement about the goals and methods of the treatment (Bordin, 1979; Howard et al., 2006; McFarquhar et al., 2018). Across all therapeutic disciplines, this alliance is consistently proven to be one of the most important factors for achieving therapeutic change.

Regardless of the motivation to seek therapy or the focus of therapy, overall interpersonal problems are associated with a poorer therapeutic alliance and weaker effects of psychological treatment (Ruiz et al., 2004). However, friendly-submissive styles are associated with better treatment outcome in social phobia patients (Cain, Pincus, & Grosse Holtforth, 2010), and high communion scores (friendliness) with better outcome for patients with depression (McFarquhar et al., 2018). This makes sense from a theoretical perspective, as friendly-submissiveness is the complementary style to that of the therapist, who usually adopts a friendly-dominant style towards the patient (Muran et al., 1994). On the other hand, a hostile-dominant style has been associated with a poorer alliance between the patient and therapist (Connolly Gibbons et al., 2003; Johansen, Melle, Iversen, & Hestad, 2013; Muran et al., 1994) and poorer treatment outcome across studies of different patient groups (Ung et al., 2017). This style conflicts with

that of the therapist. Hostile-dominant behaviour, such as aggression, invites a hostile-submissive response, such as yielding or avoidance.

Vitality, the phenomenon of alliance is not limited to the therapeutic relationship – but might be relevant to other cooperative relationships as well, including that with stakeholders in the RTW process and at the workplace. High levels of interpersonal problems in general, and of hostile-dominant problems in particular, can thus be expected to impede on these relationships in a similar manner as it impedes on the therapeutic alliance, and hamper the process of RTW.

Treatment of interpersonal problems

Numerous studies indicate that interpersonal problems respond to therapy (Horowitz et al., 1988; Kopta, Howard, Lowry, & Beutler, 1994; McFarquhar et al., 2018; Rosenthal et al., 1999; Ryum, Stiles, & Vogel, 2007). They do so relatively quickly (Horowitz et al., 1988; Ryum et al., 2007), and the changes seem to be lasting (Rosenthal et al., 1999). Other psychological symptoms (as measured by SCL-90; see Derogatis, 1977) seem easier to change than interpersonal problems, but these symptoms also tend to reach a “floor”, after which there are no more benefits from therapy, while IP continues to decrease (Horowitz et al., 1988).

In a recent meta-analysis of such changes, McFarquhar et al. (2018) show that although all kinds therapies seem to reduce interpersonal problems, there is generally a larger effect from more emotion- or process-focused therapies (such as Interpersonal psychotherapy, Intensive short-term dynamic psychotherapy and Emotion-focused therapy), than from therapies with a focus on goals/symptom reduction (such as Cognitive behavioural therapy). The authors of the meta-analysis do not attempt to explain this finding, but it does seem somewhat intuitive, as the more psychodynamically oriented therapies typically focus on early experiences and deep-rooted interpersonal patterns, while CBT typically aims at eliminating specific nonadaptive assumptions and behaviours in the present.

The agency dimension of interpersonal problems might be more amenable to change than the communion dimension (McFarquhar et al., 2018). Taken together with the findings on complementarity, this might explain why Horowitz, Rosenberg, and Bartholomew (1993) find that problems in friendly-submissive quadrant improve most frequently, whereas problems in the hostile-dominant quadrant do not improve as readily.

In sum, while focused therapeutic work on interpersonal problems, and particularly HDIP, clearly presents challenges, it is equally clear that these problems are amenable to effective and lasting change. If interpersonal problems are shown to affect the degree of successful RTW, it follows that interventions targeting interpersonal problems should be of clear interest to the field of occupational rehabilitation.

Method

Design and procedures

This prospective cohort study is based on data from a Norwegian research project on occupational rehabilitation, which was conducted at Hysnes Occupational Rehabilitation Center under St. Olav's University Hospital in Norway between October 2010 and June 2016. The details of the project, including context, funding, recruitment procedure and rehabilitation interventions, is described in the study protocol by (Fimland et al., 2014).

Patients were referred to the occupational rehabilitation programme by their general practitioner between January 2012 and June 2013, and invited to participate in the study upon admission. Participants were eligible for the program if they were between 18-60 years of age, had been on sick leave for at least eight weeks due to musculoskeletal disorders, pain, fatigue and/or common mental disorders. They had to have a self-defined goal of increasing work participation. They also had to be able to speak Norwegian, be able to attend rehabilitation between 8:30 A.M. and 3:00 P.M. on weekdays, and be able to maintain basic care for themselves while at the clinic. Exclusion criteria were pregnancy, severe mental illness (ongoing mania, psychosis or suicidal ideation), substance abuse and addiction. Moreover, patients had to have been assessed and treated for any physical health problems before being admitted to the clinic. All participants were evaluated according to the inclusion criteria by a multidisciplinary team consisting of a psychologist, a physician and a physiotherapist.

Before inclusion in the study, all the referred patients were asked to complete an online self-report survey consisting of 18 different questionnaires (386 items). The participants included in the study were further asked to complete a selection of the questionnaires at the start and termination of the rehabilitation program. The questionnaires used in the present study are included in Appendix A. Norwegian versions of the forms were filled out through CheckWare. The population is the same that was included in a recent study by Hara, Bjørngaard, Brage, et al. (2018), and they provide a more detailed description of the participants, including employment status and type of sickness benefits received. Pre-rehabilitation, 36% of the patients were on partial sick leave and the rest on full-time sick leave, and 60% in total were employed. Of temporary medical benefits, 57% received work assessment allowance and the remaining 43% received sickness benefits.

All participants completed a 3.5 week (17 six to seven-hour days) occupational rehabilitation programme. The rehabilitation was a mix of individual and group-based interventions, with a maximum of eight participants in each group. The core element of the rehabilitation was based on Acceptance and Commitment Therapy (ACT), and three main areas were targeted: mental training, physical training and work-related problem-solving. Return to work (RTW) data was collected by the Norwegian Labour and Welfare Service (NAV) in the year following rehabilitation.

Assessments

Interpersonal problems. Interpersonal problems were assessed using a 64-item version of the Inventory of Interpersonal Problems, IIP-64 (Alden et al., 1990; Horowitz et al., 1988). The IIP-64 is a self-report questionnaire consisting of 64 items. The respondent rates interpersonal behaviour which is either “hard for me to do” or that “you do too much” on a 5-point Likert scale rating from 0 (“Not at all”) to 4 (“Extremely”). The scores weigh on eight subscales that have a circumplex relation to one another: Domineering, Vindictive, Cold, Socially Avoidant, Non-assertive, Exploitable, Overly Nurturant, and Intrusive.

A global IIP-64 score (IP) was calculated as the average of the eight subscales, indicating the overall level of IP experienced (range: 0.0-4.0). Hostile-dominant interpersonal problems (HDIP) was calculated from the subscales that make up the hostile-dominant quadrant of the interpersonal circumplex, using the method described in Ryum, Stiles, Svartberg, and McCullough (2010) and Ruiz et al. (2004): $HDIP = Vindictive + (.707 * Domineering) + (.707 * Cold)$. This calculation yields total HDIP-scores ranging from 0.0 to 9.66. The internal consistency of the scales has been found to be good both in an American and a Norwegian sample (Alden et al., 1990; Monsen et al., 2006). In the current study, Cronbach’s alpha for IP and HDIP were .96 and .89 respectively, and average inter-item correlation (AIIC) was .26 for IP and .28 for HDIP.

Baseline scores on all IIP-64 subscales were used to get a profile of interpersonal problems in the population and to investigate whether patients with high levels of HDIP (arbitrarily defined by a cutoff of $> 1 SD$, $n = 28$) differed from the full sample.

Relational impairment. Relational impairment (RI) was assessed using a single item from a Norwegian adaptation of the Work and Social Adjustment Scale (WSAS). WSAS measures general impairment in functioning, and has been validated for use in different clinical populations (among them insomnia, depression and fatigue) (Mundt, Marks, Shear, & Greist, 2002). The five items in the full scale concern the patient's subjective experience of impairment in their ability to work, home management, social leisure activities, private leisure activities and ability to form and maintain relationships. The general impairment in functioning is significantly associated with symptom severity (Mundt et al., 2002). To assess RI, only the last item was used, as this is the only part of the scale assessing impairment in social functioning directly. The item reads: "Because of my disorder, my ability to form and maintain relationships with others is impaired." Participants respond on a Likert scale from 1 ("Not at all") to 8 ("Very severely"). Several studies have found high test-retest correlations for this item, indicating good reliability (Jansson-Fröjmark, 2014; Mundt et al., 2002).

Anxiety and depression. Levels of anxiety and depression were measured using the Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983). The scale consists of 14 items ($\alpha = .88$, AAIC = .35) about how the respondent has been feeling the last week, with half weighing on anxiety and half on depression. Items are rated on a 4-point Likert-scale (0-3). A total HADS score, indicating the overall level of depression and anxiety, was used as a continuous variable in the analyses. A score of 8 or more on either subscale indicates borderline or abnormal levels of anxiety or depression, but is not equal to clinical diagnoses. The psychometric properties of the scale have been reported as good (Bjelland, Dahl, Haug, & Neckelmann, 2002), and good internal consistency was also found in studies on Norwegian populations using the Norwegian translation of HADS (Leiknes, Dalsbø, & Siqveland, 2016).

Fatigue. To assess levels of fatigue, Chalder Fatigue Scale was used. The scale consists of 11 items ($\alpha = .87$, AIIC = .38) about problems the respondent has had with feeling tired, weak or lacking in energy in the last month. It covers both physical and mental fatigue. Answers are scored bimodally (0-0-1-1), giving total scores from 0 to 11. Scores of 4 or greater are considered clinical caseness. The scale has high reliability and validity scores (Chalder et al., 1993).

Insomnia. Sleep problems were measured with the Insomnia Severity Index (ISI), which consists of 7 items, ($\alpha = .86$, AICC = .35) assessing level of sleep difficulties, to what degree these difficulties reduce function and quality of life, how worried the respondent is about the problems and how visible he perceives them to be for others. Answers are given on 5-point Likert scales (0-4), yielding results from 0-28 with a clinical cutoff at 15 points. The measure has been found to have adequate internal consistency and is recommended as a standard measure of insomnia symptoms (Bastien, Vallières, & Morin, 2001; Buysse, Ancoli-Israel, Edinger, Lichstein, & Morin, 2006).

Chronic pain. Level of chronic pain was assessed using one item from the Short Form-8 health survey (SF-8), asking “How much bodily pain have you had during the last week? (no pain, very mild, mild, moderate, severe or very severe)”. The use of this single recall item to measure chronic pain has been validated in a large Norwegian sample from a population study (the HUNT 3 study), using a clinical cutoff at moderate pain (Landmark, Romundstad, Dale, Borchgrevink, & Kaasa, 2012).

Outcome measure: Return to work (RTW). Work participation following rehabilitation was retrieved from the database of the Norwegian Labour and Welfare Administration (NAV). The total number of paid work hours per week was collected biweekly from 6 weeks prior to entering the rehabilitation and up to 58 weeks after completion, and data from the year (52 weeks) following rehabilitation was used.

Hara, Bjørngaard, Jacobsen, et al. (2018) argue that participation in competitive work one day (7.5 h) or more per week represents a meaningful first step towards entering the ordinary workforce. The present study has applied this cutoff in the same manner: participants were dichotomized into groups based on whether they did RTW (≥ 7.5 hours/week, $n = 90$) or did not RTW (< 7.5 hours/week, $n = 99$).

Statistical procedures

Data analyses were performed using IBM SPSS statistics, version 25. From the original dataset of 212 cases, 23 were excluded ($N = 189$) due to most or all data missing from the main measurements, IIP-64 or RTW. Independent-samples t-tests were performed to investigate

whether the excluded group differed from the remaining sample on any measured variables. No significant differences were found, allowing further analyses to be performed. Less than 0.2% of the data (37 items) was missing, and Little's MCAR test was not significant, χ^2 (1242, $N = 189$) = 1270.23, $p = .28$, indicating that data were missing completely at random.

Cronbach's alpha was calculated to assess the internal validity of the scales. Because scales with many items might cause positive inflation of the alpha value, average inter-item correlation (AIIC, using Pearson's r correlations) was calculated as an additional indication of internal validity. Cronbach's alpha values above .70 and AIIC between .15 and .50 are considered indications of good internal consistency (Clark & Watson, 1995; McMillan & Schumacher, 2001)

Descriptive statistics were used to describe the population at baseline, and independent samples t-tests were used to compare the group that did and did not work ≥ 7.5 hours/week. Cohens d was calculated to estimate effect sizes of differences between means, and assessed after recommendations by Cohen (1988, 1992): $d = 0.2$ (small), 0.5 (medium) and 0.8 (large).

Pearson's r correlation coefficients were calculated to assess correlations between the main variables (Table 2) and evaluated according to recommendations by Cohen (1988, 1992): $r = .10$ (small), .30 (medium) and .50 (large) effect. Paired samples t-tests were used to compare relational impairment (RI) pre and post rehabilitation for the whole sample. The first 42 respondents did not complete WSAS post-rehabilitation (measuring RI), because this form was added to the relevant test battery after data collection had started. Hypothesis 3 was therefore tested in a separate logistic regression analysis ($n = 147$). The respondents with missing RI-data did not significantly differ from the rest of the group on any of the measured variables.

Separate multivariate binary block logistic regression analyses were used to test the three hypotheses. Variables were entered in separate blocks in a pre-specified order to allow for assessing their unique contributions to the model, using a similar exploratory design as an earlier study on Hysnes data (Vethe et al., 2018). The variable order was based on theoretical and methodological considerations: Demographic variables precede symptom measures for chronological reasons. The three variables of specific interest in this study (IP, HDIP and RI) were added in the last block(s) of their respective regressions, to examine whether they explain variance over and above preceding blocks. All variables except gender were treated as continuous. For detecting potential issues with collinearity, variance inflation factor (VIF) and

tolerance values were evaluated after standard recommended acceptance limits: tolerance > 0.2 (Menard, 1995) and VIF < 10 (Bowerman & O'Connell, 1990; Myers, 1990).

To test H1, the following variables were entered in 7 blocks: (1) age, (2) gender, (3) chronic pain, (4) insomnia, (5) fatigue, (6) mental health and (7) interpersonal problems (IP). This is labelled Regression 1.

To test H2, an equivalent regression was performed, only substituting IP with HDIP in step 7 (Regression 2). This hypothesis was tested in a separate regression because HDIP is an underlying dimension of IP, so these two variables would overlap in their explained variance if tested in the same model.

H3 was only tested in relation to HDIP, due to significant findings in Regression 2 but not Regression 1. To control for changes in RI, the variables RI pre- and RI post-treatment were entered in separate blocks before and after HDIP. Thus, Regression 3 consisted of the following 9 blocks: (1) age, (2) gender, (3) chronic pain, (4) insomnia, (5) fatigue, (6) mental health and (7) RI pre, (8) HDIP and (9) RI post.

The regression models were assessed in line with recommendations by Peng, Lee, and Ingersoll (2002) and Pallant (2010). Hosmer-Lemeshow Goodness-of-fit Test (H-L χ^2) was used to evaluate whether the regression model adequately fit the data ($p > .05$ indicates an acceptable fit), and Omnibus χ^2 was used to evaluate whether the model fit the data significantly ($p < .05$) better than the null model (block 0). When the model had an acceptable fit, we reported pseudo- R^2 indices (Cox & Snell and Nagelkerke) to indicate how much of the variance in the data was explained by the model, and how many cases the model correctly classified as did or did not RTW (percentage accurately classified, PAC).

To evaluate the contribution of individual predictor variables, adjusted odds ratios (AOR) and 95% confidence intervals (CI) of these were considered. The odds ratio is an effect size statistic that indicates to what degree a given predictor affects the likelihood of a subject returning to work or not. Moreover, Omnibus χ^2 was reported to consider whether the block with the predictor in question significantly improved the model above the previous block.

Given the limited sample size of $N = 189$, predictors that approach statistical significance ($p < .10$) are considered as potentially interesting trends to avoid the risk of type 2 errors. Otherwise, a standard p-value of .05 is employed.

Results

Sample characteristics

A total of 189 participants were included in the study, with a mean age of 43 (range 22 to 61). A majority were women (80%, $n = 151$). At intake, 75% of the participants reported chronic pain (of at least moderate intensity), 34% had significant sleep problems, 92% were fatigued, and 61% had at least borderline levels of anxiety, depression or both (32%). This reflects high levels of comorbidity between clinical symptoms, but should not be mistaken for clinical diagnoses. Symptom levels, interpersonal problems and relational impairment for the participants who did and did not return to work are reported in Table 1. There were no statistically significant differences between the two groups on any of the measures.

Table 1

Descriptive statistics for all participants, and comparisons of participants who did and did not RTW.

Variable	Total sample ($N = 189$)		Did not RTW ($n = 99$)		Did RTW ($n = 90$)		<i>t</i> -test		
	<i>M</i> / %	<i>SD</i> / (<i>n</i>)	<i>M</i> / %	<i>SD</i> / (<i>n</i>)	<i>M</i> / %	<i>SD</i> / (<i>n</i>)	<i>t</i>	<i>p</i>	<i>d</i>
Age	43.12	9.11	42.09	9.38	44.26	8.72	-1.64	.10	.24
Gender (female)	80%	(151)	76%	(75)	84%	(76)	-1.49	.14	.20
Pain	3.90	1.16	4.01	1.14	3.78	1.18	1.38	.17	.20
Insomnia	11.83	6.26	11.75	6.14	11.91	6.43	-0.18	.86	.03
Fatigue	8.27	2.67	8.23	2.59	8.31	2.77	-0.84	.40	.03
Anxiety/Depression	15.00	7.43	14.57	7.77	15.48	7.06	-0.20	.84	.12
IP	0.94	0.53	0.92	0.57	0.96	0.49	-0.43	.67	.07
HDIP	1.28	1.13	1.36	1.24	1.19	0.99	1.07	.28	.11
RI pre	2.59	1.95	2.39	2.02	2.81	1.85	-1.47	.14	.22
RI post ^a	2.46	1.83	2.42	1.88	2.51	1.78	-0.32	.75	.05
RTW	9.74	10.69	1.11	1.76	19.23	8.00	₋ ^b	₋ ^b	₋ ^b

Note. Pain = score on level of somatic pain from the Short-Form Health Status-8. Fatigue = sum score on the Chalder Fatigue Scale. Insomnia = sum score on the Insomnia Severity Index. Anxiety/Depression = sum score on the Hospital Anxiety and Depression Scale. IP = sum score on the Inventory of Interpersonal Problems. HDIP = calculated sub-score from the Inventory of Interpersonal Problems. Relational impairment = score on relational impairment on the Work and Social Adjustment Scale RTW (return to work) = average hours worked per week in the first year after rehabilitation. All elements represent raw, nonstandardized scores.

^a $n = 147$ for the RI post measure. Of the 42 nonresponders to RI post, 22 did RTW and 20 did not. ^bScore is redundant because this measure was used to split the groups.

It is also useful to get a clear overview of the interpersonal problems reported by the sample. Figure 2 shows that participants on average report between none (0) and a little (1) problems on the dimensions cold, vindictive, dominant and intrusive, while on average reporting little to moderate (1-2) problems with being socially avoidant, non-assertive, exploitable and overly nurturant. This looks slightly different for the group that report higher levels of HDIP, who on average report little to moderate problems on the hostile-dominant dimensions and moderate problems on the friendly-submissive dimensions. Exact scores and standard deviations are provided in Appendix B.

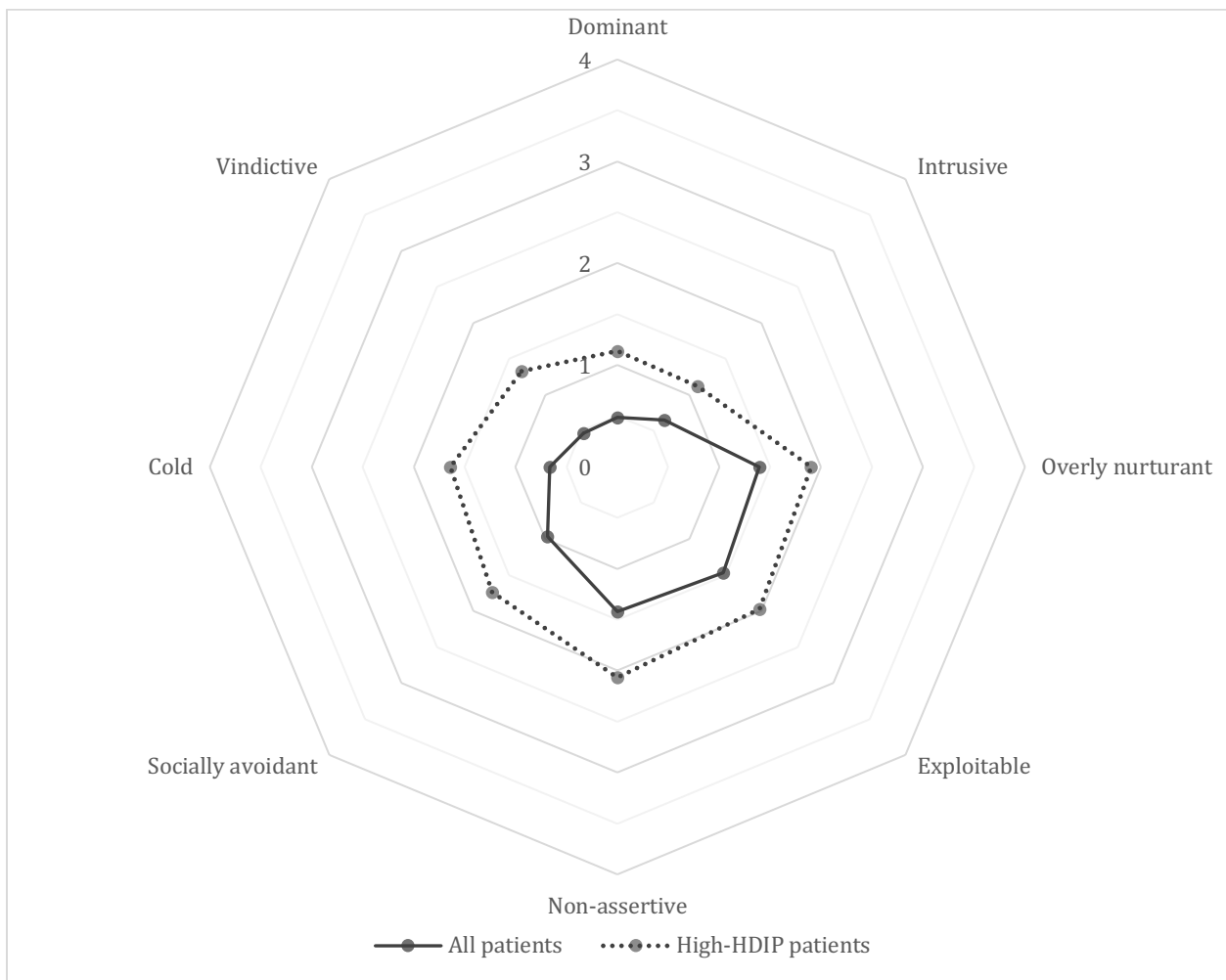


Figure 2. IIP-64 subscale scores for the study population ($n = 189$) and the patient group with high HDIP scores (as defined by a cutoff of > 1 SD, $n = 28$).

Hypothesis testing

Preliminary bivariate analyses (Table 2) showed no correlation between interpersonal problems (IP) and return to work (RTW), $r = .03, p = .69$ or between hostile-dominant interpersonal problems (HDIP) and RTW, $r = -.08, p = .28$. Nor is any other variable significantly correlated with RTW.

Table 2
Correlations for study variables in 189 patients on long-term sick leave

Measure	1	2	3	4	5	6	7	8	9	10
1. Age	-									
2. Gender (female)	-.03	-								
3. Pain	.02	.13	-							
4. Insomnia	.17*	.01	.22**	-						
5. Fatigue	.19**	.09	.10	.34**	-					
6. Anxiety/Depression	.09	-.04	-.02	.45**	.40**	-				
7. IP	.15*	.02	-.05	.38**	.31**	.66**	-			
8. HDIP	.03	-.05	-.10	.36**	.21**	.57**	.78**	-		
9. RI pre	-.11	-.10	-.01	.35**	.28**	.48**	.38**	.38**	-	
10. RI post ($n = 147$)	-.01	.00	.07	.30**	.23**	.27**	.17*	.18*	.54**	-
11. RTW	.12	.11	-.10	.01	.01	.06	.03	-.08	.11	.03

Note. The variation in sample size is due to 42 patients not completing WSAS at follow-up. Pain = score on level of somatic pain from the Short-Form Health Status-8. Fatigue = sum score on the Chalder Fatigue Scale. Insomnia = sum score on the Insomnia Severity Index. Anxiety/Depression = sum score on the Hospital Anxiety and Depression Scale. IP = sum score on the Inventory of Interpersonal Problems. HDIP = calculated sub-score from the hostile-dominant quadrant of the Inventory of Interpersonal Problems. RI (relational impairment) = score on relational impairment on the Work and Social Adjustment Scale. RTW (return to work) = average hours worked per week in the first year after rehabilitation.

* $p < .05$

** $p < .01$

The three main hypotheses were tested in separate regressions. VIF and tolerance values for all variables indicated no problems with multicollinearity. A summary of the final block of each regression is displayed in Table 3.

H1: Higher levels of interpersonal problems pre-admission predict lower likelihood of RTW in the year following occupational rehabilitation, independently of symptom levels.

Regression 1 assessed the impact of overall IP on the likelihood that the patients would return to work after rehabilitation. The full model (block 7) had an acceptable fit to the data, H-L $\chi^2(8) = 6.38, p = .60$, explained between 4.6% (Cox & Snell R^2) and 6.2% (Nagelkerke R^2) of the variance in RTW, and classified 62.4% of cases correctly (PAC), but did not significantly differ from the null model, Omnibus $\chi^2(7) = 8.95, p = .26$.

IP did not make an independent and statistically significant contribution to the model (AOR = 0.82, 95% CI [0.39, 1.72], $p = .59$), and block 7 did not significantly improve the fit of the model from the previous block, Omnibus $\chi^2(1) = 0.29, p = .59$.

Thus, the data does not support the hypothesis (H1) that interpersonal problems predict RTW.

H2: Hostile-dominant interpersonal problems pre-admission predict lower likelihood of RTW in the year following occupational rehabilitation, independently of symptom levels. Regression 2 assessed if HDIP specifically predicted RTW. The full model (block 7) had an acceptable fit to the data, H-L $\chi^2(8) = 4.49, p = .81$, and explained between 6.6% (Cox & Snell R^2) and 8.8% (Nagelkerke R^2) of the variance in RTW, with a PAC of 61.4%. According to the Omnibus test of model evaluation, the model approaches statistical significance in how well it explains the data over and above the null model, $\chi^2(7) = 12.90, p = .08$.

Only the variable HDIP made a statistically significant unique contribution to the model, recording an AOR of 0.71, 95% CI [0.51, 0.99], $p = .045$. This indicates that for every extra point of HDIP, the patient is 29% less likely to RTW. Since the upper limit of the confidence interval approaches 1.00, the finding must be interpreted with caution, as an odds ratio of 1 would indicate no effect. Block 7 significantly improved the fit of the model over and above block 6, Omnibus $\chi^2(1) = 4.24, p = .04$.

These findings support H2.

H3: A reduction in relational impairment post-rehabilitation weakens the predictive power of HDIP on RTW. Change in RI from pre- to post rehabilitation varied between 0 and +/- 6 points ($M = 1.24, SD = 1.32, n = 147$), indicating that some patients rated their RI as better

after treatment compared to before, while others reported the opposite. At the group level, there were no significant time differences between pre ($M = 2.59$, $SD = 1.95$, $N = 189$) and post scores ($M = 2.46$, $SD = 1.83$, $n = 147$), $t = 1.28$, $p = .20$, $d = .07$.

Regression 3 significantly predicted RTW, (H-L $\chi^2 [8] = 6.00$, $p = .65$, Cox & Snell $R^2 = 8.9\%$, Nagelkerke $R^2 = 11.9\%$, PAC = 59.2%), but not better than the null model, Omnibus $\chi^2 (9) = 13.75$, $p = .13$.

HDIP significantly predicted RTW when first entered into the model in block 8, AOR = 0.62, 95% CI [0.41, 0.93], $p = .02$, and the block significantly improved the model, Omnibus $\chi^2 (1) = 6.06$, $p = .01$, equivalent to the results of H2. When controlling for change in level of RI (block 9), HDIP remained a significant predictor, AOR = 0.62, 95% CI [0.41, 0.93], $p = .02$. RI post had no predictive value on RTW, AOR = 1.00, 95% CI [0.80, 1.25], $p = .997$, and the block did not improve the model, Omnibus $\chi^2 (1) = 0.00$, $p = .997$. Hypothesis 3 is therefore not supported.

HDIP was the only variable in any of the analyses to uniquely predict RTW. Neither gender, age, baseline symptom levels or relational impairment pre or post rehabilitation had a predictive effect on the chance of RTW in any of the regressions as evaluated by AOR and Omnibus χ^2 for the respective blocks.

Table 3

Summary of final block of logistic regression analyses testing predictors of return to work (RTW) for 189 patients on long-term sick leave, investigating at interpersonal problems (IP, Regression 1), hostile-dominant interpersonal problems (HDIP, Regression 2), and both HDIP and relational impairment (RI, Regression 3) as predictors.

Variable	Regression 1, block 7 ^a		Regression 2, block 7 ^b		Regression 3, block 9 ^c (n = 147)	
	AOR ^d	95% CI	AOR ^d	95% CI	AOR ^d	95% CI
Constant	0.15		0.18		0.15	
Age	1.03 ⁺	[1.00, 1.07]	1.03	[0.99, 1.06]	1.04	[0.99, 1.08]
Gender (female)	2.05 ⁺	[0.95, 4.39]	2.01 ⁺	[0.93, 4.32]	1.96	[0.79, 4.88]
Pain	0.81	[0.62, 1.06]	0.78 ⁺	[0.59, 1.02]	0.74 ⁺	[0.54, 1.03]
Insomnia	1.00	[0.95, 1.06]	1.01	[0.95, 1.07]	1.01	[0.94, 1.08]
Fatigue	0.97	[0.86, 1.10]	0.97	[0.85, 1.10]	1.01	[0.87, 1.17]
Anxiety/depression	1.03	[0.97, 1.09]	1.05 ⁺	[0.99, 1.11]	1.02	[0.95, 1.09]
RI pre					1.14	[0.89, 1.45]
IP	0.82	[0.39, 1.72]				
HDIP			0.71*	[0.51, 0.99]	0.62*	[0.41, 0.93]
RI post					1.00	[0.80, 1.25]

Note. Dependent variable: return to work, dichotomized at more or less than 7.5 hours per week on average. The variation in sample size is due to 42 patients not completing the Work and Social Adjustment Scale post rehabilitation. Pain = score on level of somatic pain from the Short-Form Health Status-8. Fatigue = sum score on the Chalder Fatigue Scale. Insomnia = sum score on the Insomnia Severity Index. Mental health = sum score on the Hospital Anxiety and Depression Scale. Relational impairment = score on item 5 on the Work and Social Adjustment Scale.

Interpersonal problems = sum score on Inventory of Interpersonal Problems. HDIP = calculated sub-score from Inventory of Interpersonal Problems. AOR = adjusted odds ratio; COR = crude odds ratio; CI = confidence interval.

^a Pseudo-R² = .046 (Cox & Snell) .062 (Nagelkerke), PAC = 62.4%. ^b Pseudo-R² = .066 (Cox & Snell) .088 (Nagelkerke), PAC = 61.4%. ^c Pseudo-R² = .089 (Cox & Snell) .119 (Nagelkerke), PAC = 59.2%. ^d Odds ratio from multivariate regression analyses where all variables are entered simultaneously. ^e Odds ratio from univariate regression analyses. ^f n=147.

*p < .05

⁺p < .10

Discussion

In line with our predictions (H2), this study found that higher baseline levels of hostile-dominant interpersonal problems (HDIP) in patients on long term sick leave hinder a successful return to work (RTW) after occupational rehabilitation. This effect persists regardless of the levels of common health complaints such as chronic pain, fatigue, sleep problems and mild psychological problems. A single point increase in HDIP reduces the chances of RTW with 29%. Contrary to our expectations, changes in relational impairment (RI) during the rehabilitation stay had no impact on the strength of the relationship (H3). Overall interpersonal problems (IP) did not predict RTW (H1).

The distribution of interpersonal problems in our population skews heavily toward submissive and friendly styles – both for the population as a whole, but also when only examining the participants with high HDIP scores (see Figure 2). This is, therefore, not a finding about “people with a predominantly hostile-dominant style”. Instead, the presence of HDIP seem to represent a general risk factor, even at low levels. Other types of interpersonal problems, even if reported as more severe than HDIP, do not seem to impact RTW outcomes.

There might be several reasons why HDIP are so detrimental to RTW. Using interpersonal theory, we can make some inferences based on which kinds of difficulties might result from dominant and hostile styles respectively. A dominant interpersonal style is motivated by a strong need for agency, for example a need to feel competent and to influence other people. This becomes a problem when a person strives to achieve these goals in ways that are counterproductive and have unintended consequences. When they are unsuccessful in imposing the influence or getting the admiration they seek, their goal is hindered, and they experience negative affect such as anger (Horowitz, 2004). Striving for dominance by trying to influence and control others might successfully make someone submit to you, but might also provoke confrontation and conflict. People with more HDIP are also distrustful, suspicious that others want to do them harm. Added up, this impedes both cooperation and communication. Even empathy and friendly inquiries from a co-worker or leader could be interpreted as an attempt at manipulation. Striving for dominance is also associated with difficulties with authorities. In a job, and particularly when returning to a workplace after sick leave or starting a new job, one generally has to deal with superiors, and in many cases also GPs, caseworkers and other stakeholders that have authority. Hostility and dominance are likely to hamper all these processes.

The need for agency might be particularly threatened in the situation of being on sick leave. Work is a source of competence, autonomy and independence. Conversely, being sick causes you to depend on others, and sickness is a prime example of something you cannot control, likely magnifying the effects of problematic dominance behaviour in a sick leave context.

HDIP also encompasses detachment and hostility, i.e. low scores on the communion axis. Problems of this type are also likely to impede cooperation, as getting along with others is not a priority. This harms performance, given that most jobs involve relying on co-workers or dealing with customers. In addition, difficulties in feeling close to others and building relationships could lead the person to have less of a support network around him to support through the recovery process.

Tjulin and MacEachen (2016) review social factors at the workplace which influence the RTW process. Amongst other factors, they find that *perception of fairness*, *preserved dignity* and *respect for the fact that they still have legitimate health problems* are important. These can be linked to the interpersonal agency dimension. Other factors identified include *closeness of relations* and *perceived social support*, which are related to the communion dimension. Note that all these factors are reliant on the perception of the returning worker, and only to a limited extent reflect the actual social landscape of the workplace. Given the suspicious and self-centered nature of high-HDIP individuals, it thus seems likely that HDIP might impair the RTW process through factors like these, and that interpersonal psychology could serve as a framework that helps explain many of the correlational findings reported by Tjulin and MacEachen (2016).

In psychotherapy research, hostile-dominance has been found to negatively correlate with therapeutic alliance (Connolly Gibbons et al., 2003; Cookson et al., 2012), and might as such impede the therapeutic process in occupational rehabilitation, so these patients benefit less from therapy. Understanding alliance as the degree of trust and cooperation between two people, the phenomenon also exists in relationships outside of psychotherapy. For example, patients form alliances with other healthcare professionals, leaders, co-workers and other stakeholders. This way, poor alliance could impede other parts of the RTW process, as well as the health recovery.

Furthermore, a link has recently been demonstrated between hostile-dominance and pain catastrophizing, indicating that the interpersonal context of pain conditions is likely more important than previously acknowledged (Boersma, Flink, & Linton, 2019; Ryum, Jacobsen, Borchgrevink, Landrø, & Stiles, 2019). Pain catastrophizing is defined as an exaggerated negative orientation to actual or anticipated pain (M. J. Sullivan et al., 2001), and higher levels of pain catastrophizing have been linked to numerous adverse outcomes. Ryum et al. (2019) showed that hostile-dominant interpersonal problems explained unique variance in pain catastrophizing. In this light, pain catastrophizing can be understood as a strategy this group uses to communicate their need for attention and support. While this might be a useful short-term strategy, in the longer term it might contribute to both social exclusion and exacerbate their pain issues, both affecting RTW negatively.

In the present study, participants with HDIP simultaneously have other, more prominent, interpersonal problems, and their most reported problems are of the friendly-submissive type. This is

true even for the patients with the highest HDIP scores (see Figure 2). It is also tempting to speculate that the combination of these interpersonal problems might make a person even harder to relate to or cooperate with, as would be the case with someone who normally seems eager to please and get along, but suddenly acts paranoid, controlling and hostile.

The results are further illuminated by the lack of support for H1: Overall interpersonal problems measured at baseline did not predict who successfully returned to work. The simplest explanation for this result – that there is no link whatsoever between the two – can be dismissed by the finding on HDIP. Why, then, do we not find a link between overall IP scores and RTW rates?

The IIP-64 is a complex measure, and the overall IP score is the sum of a variety of problems which manifest in different ways. There might be several key differences between HDIP and other types of interpersonal problems, both in terms of how they play out in the context of therapy and returning to work, and in terms of how they can be changed in therapy.

Even though all the maladaptive interpersonal styles are problematic in some way, not all of them are equally problematic in the context of returning to work. For example, friendly-submissive interpersonal strategies (such as being overly friendly, submissive and eager to please) are a double-edged sword: These strategies make people exploitable and dependent on others, but they also tend to make people very cooperative – a valued trait in employees and co-workers. The same friendly-submissive strategies are also beneficial in psychotherapy, as they are associated with a better therapeutic alliance and better outcome (Connolly Gibbons et al., 2003; Horowitz et al., 1988; Muran et al., 1994). In an RTW process, the benefits of some interpersonal problems could very well outweigh the costs, explaining our result.

Another likely reason why H1 lacks support is that only pre-treatment measurements of interpersonal problems were used, as post-treatment levels were not measured. An unpublished study (Susegg & Vatne, 2006) found that pre-treatment levels of interpersonal problems were not related to RTW outcomes, but post-treatment scores were. The authors, who were themselves therapists in the study, posit that this might be due to a self-balancing property of interpersonal problems measured at intake: Where interpersonal problems are a major issue, they get more attention in therapy, whereas patients with less interpersonal problems at intake have therapies with other areas of focus. In this study, it is not clear whether the problematic HDIP were successfully reduced during the occupational rehabilitation.

There are several reasons to believe that hostile-dominant interpersonal problems are both rarely addressed in therapy, and hard to change. On an intrapersonal level, people have a fundamental need to perceive themselves as good and competent (Deci & Ryan, 2008; Horowitz, 2004). Being “too kind” (friendly-submissive) means having too much of a valued trait, which is an

acceptable kind of problem. On the other hand, the thought of being “too hostile and controlling” (hostile-dominant) threatens the idea of oneself as a good person. This threat can be remedied by instead thinking of other people as too weak, needy and soft-hearted – while conveniently not viewing oneself as the problem. This means friendly-submissive problems are easier to think about, and therefore more likely to be *egodystonic* – clearly seen as a separate problem, and not a part of oneself. Conversely, hostile-dominant problems are more *egosyntonic* - not clearly differentiated from the self, since reasoning about them in the first place is not acceptable. When this is the case, pointing out someone’s unhelpful patterns of behaviour might feel like direct criticism of their person, unless it is done with sufficient care and by a trusted figure – the kind of care and trust that a psychotherapeutic relationship can offer. Being overly cautious, maintaining control and keeping others at a distance seems necessary to the person doing it in order to avoid harm and maintain self-esteem. Viewing HDIP as a strategy for survival, it follows that people with this style have a need to *not* be fully aware of their own interpersonal style and how it affects their surroundings. Addressing HDIP in therapy thus requires reframing the problems as egodystonic before client and therapist can approach them together.

The therapy context has additional factors working against HDIP being addressed. In addition to the patient’s difficulty understanding or formulating the source of their difficulties, therapists might be likely to shy away from these topics. Reviewing therapist responses to different personality disorders (PDs), Ettner (2011) found that therapists reported feeling criticized, mistreated, devalued, resentful, and wanted to terminate the therapies where patients had hostile and dominant PDs (narcissistic, paranoid, dissocial). While there is a big difference between clinically diagnosed PDs and low levels of the related construct of HDIP, Ettner’s findings clearly show that these kinds of problems are unpleasant to address. The same phenomenon might explain the findings on HDIP and alliance, discussed earlier.

All the processes mentioned above might have contributed to friendly-submissive problems being addressed in both individual and group therapy sessions during occupational rehabilitation – even though these might not be the problems impacting RTW the most. Besides, friendly-submissive problems are more often a focus area of therapy in general (Horowitz et al., 1993).

It is unclear exactly how interpersonal problems were targeted or altered in the occupational rehabilitation in this study, but the overlapping construct of relational impairment was measured both pre and post rehabilitation. Relational impairment concerns the ability to form and maintain relationships. This construct is somewhat conceptually similar to interpersonal problems, as it considers one of the most central consequences of these problems. Relational functioning might have been altered through the daily group therapy sessions, a format that has an implicit focus on

connecting with others, forming and maintaining relationships, no matter which topic is the explicit focus. The measure could therefore help illuminate the effect of the rehabilitation stay.

Contrary to our expectations, the analyses show no support for the hypothesis (H3) that improved relational functioning influences how baseline HDIP impact later chances of RTW. In other words, HDIP continue to impede RTW despite improvement in relational functioning. A possible explanation for this is that patients had improvement in other types of interpersonal problems, and thereby experienced reduced relational impairment, even though the HDIP persisted. This would make sense, as HDIP are less evident to the patients themselves and more challenging to address in therapy than other kinds of IP (Horowitz et al., 1993), as discussed previously. Since the participants report more friendly-submissive interpersonal problems than any other type, such problems have likely gotten more attention during rehabilitation, which could explain the subjective relational improvement.

An alternative explanation for the finding is that relational impairment specifically is not what accounts for how HDIP obstruct RTW. Hostile-dominance likely affects the ability to form and maintain relationships, but these problems also have other interpersonal consequences, including issues dealing with authorities, need for control and suspiciousness. If improved relational functioning does not improve RTW, these other factors may be more central barriers to the RTW process. An implication of this finding is that it seems insufficient to only address relational impairment in occupational rehabilitation. Specific interpersonal problems should be identified and attended to.

Implications

Higher HDIP scores at baseline seem to be a hinder for successful RTW, regardless of other health issues, implying that patients with this type of interpersonal problems could benefit from extra attention in an RTW process. Future research should examine which interventions most effectively facilitate RTW. However, one proposal that emerges readily from the available literature is that people with higher HDIP scores might benefit from addressing their interpersonal problems in psychotherapy. This proposal builds on two assumptions: (1) HDIP are a major barrier to RTW, as this study has shown, and (2) interpersonal problems in general can be reduced in therapy (Horowitz et al., 1993; McFarquhar et al., 2018; Rosenthal et al., 1999). In a meta-analysis of different therapies' efficacy in reducing interpersonal problems, McFarquhar et al. (2018) found that more emotion-focused therapies (such as dynamic or interpersonally oriented therapies) had markedly better results than goal-oriented therapies (such as CBT). This is perhaps not surprising, as the entire dynamic tradition has revolved around fundamental personality change and phenomena in the

interpersonal space between patient and therapist, while the cognitive tradition has been more symptom-oriented. Our recommendation would therefore be to look to the dynamic tradition when selecting therapies to remedy HDIP.

Few, if any, studies exist on how to reduce HDIP specifically, but two of the likely challenges of such work have been covered in this discussion: Alliance formation, and framing the problems as egodystonic. The literature on treatment of personality disorders (particularly those that map to the hostile-dominant quadrant) is highly relevant, but knowledge in this field is also severely limited (see Bateman, Gunderson, & Mulder, 2015; Karterud et al., 2017).

Other stakeholders in the RTW process might benefit from a strategical approach to these types of interpersonal problems. How could, for instance, an employer best understand and handle the returning worker's distrust of others, and difficulties with authorities? There are alternatives to treating the interpersonal problems of the returning worker in psychotherapy. In some cases, facilitated talks between the worker and employer or co-workers could prove useful. Guidelines, accommodations and training at various levels of an organization can also help alleviate the problem. Good solutions require a proper understanding of the problem, and it is our hope that this thesis can serve as a starting point for a clearer understanding.

Strengths and limitations

This study has several methodological strengths. One of these is the breadth and completeness of collected data. Another is the quality of the RTW measure, using data extracted directly from the database of the Norwegian Health and Welfare Service (NAV). The prospective cohort design and the heterogeneity of the sample (in terms of clinical symptoms and high comorbidity) has several advantages. The design is well suited to explore the influence of interpersonal problems on RTW, without the single-diagnosis limitation many similar studies have (Hara, Bjørngaard, Jacobsen, et al., 2018; Henderson et al., 2011). It also gives the study good ecological validity, as the study population is fairly representative for the general sick leave population in Norway. This makes the results highly generalisable.

The study also has limitations worth mentioning. First, all clinical measures were assessed by self-report, while the gold standard for evaluating psychiatric symptoms is clinical assessment. However, all questionnaires used (IIP-64, ISI, SF-8, HADS, CFS, WSAS) are thoroughly validated in different clinical populations, and are stable (high test-retest reliability) as well as sensitive to clinical change.

Second, the sample in this study was relatively small ($N = 189$), meaning the findings are likely underestimated. A larger sample size would have yielded more statistical power and reduced the risk of committing type-2 errors.

Third, participants in this study had fairly low scores on all interpersonal problems subscales – slightly less than the normal population and far less than psychiatric outpatients (Bjerke et al., 2011). This might be because patients with personality disorders (assessed with SCID-2 at intake) were excluded from the study. Personality disorders are characterized by debilitating levels of interpersonal problems (Karterud et al., 2017), so excluding these patients reduces the average levels of interpersonal problems in the selection. Including participants with personality disorders in the study might have yielded noticeably stronger relationships between interpersonal problems and RTW in the analyses, and also increased ecological validity.

Fourth, all three regressions explained little (4-11%) of the variance in RTW, indicating that the majority of what influences RTW are factors outside the ones examined in this study. This speaks to the complexity of the RTW construct, a topic covered in detail elsewhere (Loisel et al., 2005).

Fifth, stronger conclusions could have been drawn from this study if IIP-64 had been administered again after rehabilitation.

Lastly, the specific measure used to evaluate relational impairment has methodological limitations. The single item from WSAS used for this measure has good test-retest reliability, but has not been validated for measuring RI specifically. The wording of the item (“Because of my disorder, my ability to form and maintain relationships with others is impaired”) measures two constructs – both the degree of RI, and to what degree RI is caused by the disorder. The social and therapeutic elements of the 3.5 week stay at Hysnes Rehabilitation Center might have changed perceptions regarding either or both constructs, introducing some uncertainty as to what is being measured.

Future directions

Based on our findings and the discussion above, we have several recommendations for future research. First, it is essential to investigate the effect of therapy which is directed at reducing HDIP, preferably through randomized controlled trials where therapy with interpersonal focus is compared to symptom-focused therapy and treatment as usual. Second, in future research designs, IIP-64 should be administered both before and after therapy. This kind of data would enable investigating whether reduced problems truly predict better chances of RTW, and also open other avenues of research, for example the relative contributions of specific IIP-64 scales. Third, outcomes should be tracked for more than one year, to assess if interpersonal problems affect RTW trends over longer time frames. Lastly, future RTW research should investigate how changes in HDIP affect the quality

of the returning worker's relationships with superiors, coworkers, health care professionals and other stakeholders.

Conclusion

The present study is the first to examine the intersection between interpersonal problems and occupational rehabilitation. The main finding is that higher levels of hostile-dominant interpersonal problems seem to reduce chances of a successful return to work after long-term sick leave. The effect is independent of common symptoms like chronic pain, fatigue, sleep problems, and mild psychological problems. This novel finding clearly demonstrates the importance of considering patients' specific interpersonal styles in the field of occupational rehabilitation – both in treatment and in the workplace. Future research should address questions about causality and treatment, and the results could have major implications for policymakers, employers and healthcare providers alike.

References

- Alden, L. E., Wiggins, J. S., & Pincus, A. L. (1990). Construction of circumplex scales for the Inventory of Interpersonal Problems. *Journal of personality assessment*, 55(3-4), 521-536.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*: American Psychiatric Pub.
- Appelberg, K., Romanov, K., Heikkilä, K., Honkasalo, M.-L., & Koskenvuo, M. (1996). Interpersonal conflict as a predictor of work disability: a follow-up study of 15,348 Finnish employees. *Journal of psychosomatic research*, 40(2), 157-167.
- Aylward, S. M. (2016). Overcoming Barriers to Recovery and Return to Work: Towards Behavioral and Cultural Change. In I. Z. Schultz & R. J. Gatchel (Eds.), *Handbook of Return to Work: From Research to Practice* (pp. 119-139). Boston, MA: Springer US.
- Babiak, P. (1995). When psychopaths go to work: A case study of an industrial psychopath. *Applied Psychology*, 44(2), 171-188.
- Bastien, C. H., Vallières, A., & Morin, C. M. (2001). Validation of the Insomnia Severity Index as an outcome measure for insomnia research. *Sleep medicine*, 2(4), 297-307.
- Bateman, A. W., Gunderson, J., & Mulder, R. (2015). Treatment of personality disorder. *The Lancet*, 385(9969), 735-743.
- Becker, D., Whitley, R., Bailey, E. L., & Drake, R. E. (2007). Long-term employment trajectories among participants with severe mental illness in supported employment. *Psychiatric services*, 58(7), 922-928.
- Bessen, J. E. (2016). How computer automation affects occupations: Technology, jobs, and skills. *Boston Univ. School of Law, Law and Economics Research Paper No. 15-49*(15-49).
- Bjelland, I., Dahl, A. A., Haug, T. T., & Neckelmann, D. (2002). The validity of the Hospital Anxiety and Depression Scale: an updated literature review. *Journal of psychosomatic research*, 52(2), 69-77.
- Bjerke, E., Hansen, R. S., Solbakken, O. A., & Monsen, J. T. (2011). Interpersonal problems among 988 Norwegian psychiatric outpatients. A study of pretreatment self-reports. *Journal of Comprehensive Psychiatry*, 52(3), 273-279.
- Boersma, K., Flink, I. K., & Linton, S. J. (2019). Considering the interpersonal context of pain catastrophizing. *Scandinavian Journal of Pain*, 20(1), 9-10.
- Bordin, E. S. (1979). The Generalizability of the Psychoanalytic Concept of the Working Alliance. *Psychotherapy: Theory, research and practice*, 16(3), 252-260.
- Bowerman, B. L., & O'Connell, R. T. (1990). *Linear statistical models : an applied approach* (2nd ed. ed.). Boston: PWS-Kent Publ.
- Brage, S., & Thune, O. (2015). Ung uførhet og psykisk sykdom. *Arbeid og velferd*, 1, 37-49.
- Buysse, D. J., Ancoli-Israel, S., Edinger, J. D., Lichstein, K. L., & Morin, C. M. (2006). Recommendations for a standard research assessment of insomnia. *Sleep*, 29(9), 1155-1173.
- Cain, N. M., Pincus, A. L., & Grosse Holtforth, M. (2010). Interpersonal subtypes in social phobia: diagnostic and treatment implications. *Journal of personality assessment*, 92(6), 514-527. doi:10.1080/00223891.2010.513704

- Cancelliere, C., Donovan, J., Stochkendahl, M. J., Biscardi, M., Ammendolia, C., Myburgh, C., & Cassidy, J. D. (2016). Factors affecting return to work after injury or illness: best evidence synthesis of systematic reviews. *Chiropractic & manual therapies*, *24*(1), 32.
- Castonguay, L. G., Constantino, M. J., Boswell, J. F., & Kraus, D. R. (2010). The Therapeutic Alliance: Research and Theory. In L. M. Horowitz & S. Strack (Eds.), *Handbook of Interpersonal Psychology* (pp. 509-518). Hoboken, NJ: John Wiley & Sons.
- Chalder, T., Berelowitz, G., Pawlikowska, T., Watts, L., Wessely, S., Wright, D., & Wallace, E. (1993). Development of a fatigue scale. *Journal of psychosomatic research*, *37*(2), 147-153.
- Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, *7*(3), 309-319.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Cohen, J. (1992). A power primer. *Psychology Bulletin*, *122*, 155-159.
- Connolly Gibbons, M. B., Crits-Christoph, P., de la Cruz, C., Barber, J. P., Siqueland, L., & Gladis, M. (2003). Pretreatment expectations, interpersonal functioning, and symptoms in the prediction of the therapeutic alliance across supportive-expressive psychotherapy and cognitive therapy. *Psychotherapy Research*, *13*(1), 59-76. doi:10.1093/ptr/kpg007
- Cookson, A., Daffern, M., & Foley, F. (2012). Relationship between aggression, interpersonal style, and therapeutic alliance during short-term psychiatric hospitalization. *Int J Ment Health Nurs*, *21*(1), 20-29. doi:10.1111/j.1447-0349.2011.00764.x
- Cornelius, L. R., van der Klink, J. J. L., Groothoff, J. W., & Brouwer, S. (2011). Prognostic Factors of Long Term Disability Due to Mental Disorders: A Systematic Review. *Journal of occupational rehabilitation*, *21*(2), 259-274. doi:10.1007/s10926-010-9261-5
- D'Amato, A., & Zijlstra, F. (2010). Toward a climate for work resumption: the nonmedical determinants of return to work. *Journal of occupational and environmental medicine*, *52*(1), 67-80.
- de Dreu, C. K., Van Dierendonck, D., & Dijkstra, M. T. (2004). Conflict at work and individual well-being. *International journal of conflict management*, *15*(1), 6-26.
- de Vries, M. F. K., & Miller, D. (1985). Narcissism and leadership: An object relations perspective. *Human Relations*, *38*(6), 583-601.
- Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology/Psychologie canadienne*, *49*(3), 182-185.
- Derogatis, L. R. (1977). SCL-90R (revised version) manual I. *Baltimore: Johns Hopkins University School of Medicine*.
- Eftedal, M., Kvaal, A. M., Ree, E., Øyeflaten, I., & Mæland, S. (2017). How do occupational rehabilitation clinicians approach participants on long-term sick leave in order to facilitate return to work? A focus group study. *BMC health services research*, *17*(1), 744.
- Engel, G. L. (1977). The need for a new medical model: a challenge for biomedicine. *Science*, *196*(4286), 129-136.
- Ettner, S. L. (2011). Personality disorders and work. In I. Z. Schultz & E. S. Rogers (Eds.), *Work Accomodation and Retention in Mental Health*. London: Springer.

- Ettner, S. L., Maclean, J. C., & French, M. T. (2011). Does having a dysfunctional personality hurt your career? Axis II personality disorders and labor market outcomes. *Industrial Relations: A Journal of Economy and Society*, 50(1), 149-173.
- Fimland, M. S., Vasseljen, O., Gismervik, S., Rise, M. B., Halsteinli, V., Jacobsen, H. B., . . . Johnsen, R. (2014). Occupational rehabilitation programs for musculoskeletal pain and common mental health disorders: study protocol of a randomized controlled trial. *BMC Public Health*, 14(1), 368.
- Finnes, A., Enebrink, P., Ghaderi, A., Dahl, J., Nager, A., & Öst, L.-G. (2019). Psychological treatments for return to work in individuals on sickness absence due to common mental disorders or musculoskeletal disorders: a systematic review and meta-analysis of randomized-controlled trials. *International archives of occupational and environmental health*, 92(3), 273-293.
- First, M. B. (2005). Mutually exclusive versus co-occurring diagnostic categories: the challenge of diagnostic comorbidity. *Psychopathology*, 38(4), 206-210.
- Floderus, B., Goransson, S., Alexanderson, K., & Aronsson, G. (2005). Self-estimated life situation in patients on long-term sick leave. *Journal of rehabilitation medicine*, 37(5), 291-299.
- Fournier, M. A., Moskowitz, D. S., & Zuroff, D. C. (2010). Origins and applications of the interpersonal circumplex. In L. M. Horowitz & S. Strack (Eds.), *Handbook of interpersonal psychology: Theory, research, assessment, and therapeutic interventions* (pp. 57-73). Hoboken, NJ: John Wiley & Sons.
- Friesen, M. N., Yassi, A., & Cooper, J. (2001). Return-to-work: The importance of human interactions and organizational structures. *Work*, 17(1), 11-22.
- Frone, M. R. (2000). Interpersonal conflict at work and psychological outcomes: testing a model among young workers. *Journal of occupational health psychology*, 5(2), 246.
- Gatchel, R. J., & Turk, D. C. (1996). *Psychological approaches to pain management: a practitioner's handbook*. New York: Guilford Publications, Inc.
- Gleinsvik, A., Staalesen, P. D., & Mastekaasa, A. (2014). *Internasjonal sammenligning av sykefravær - delrapport 1*. Oslo: Proba samfunnsanalyse.
- Gross, D. P., Bostick, G. P., & Carroll, L. J. (2016). Risk Identification and Prediction of Return to Work in Musculoskeletal Disorders. In I. Z. Schultz & R. J. Gatchel (Eds.), *Handbook of Return to Work: From Research to Practice* (pp. 207-220). Boston, MA: Springer US.
- Gunderson, E. E., & Hourani, L. L. (2003). The epidemiology of personality disorders in the US Navy. *Military medicine*, 168(7), 575-582.
- Hagen, E. M., Svensen, E., Eriksen, H. R., Ihlebæk, C. M., & Ursin, H. (2006). Comorbid subjective health complaints in low back pain. *Spine*, 31(13), 1491-1495.
- Hagen, R., Johnson, S. U., Rognan, E., & Hjemdal, O. (2012). Mot en felles grunn: En transdiagnostisk tilnærming til psykologisk behandling. *Tidsskrift for Norsk psykologforening*, 49(3), 247-252.
- Hara, K. W., Bjørngaard, J. H., Brage, S., Borchgrevink, P. C., Halsteinli, V., Stiles, T. C., . . . Woodhouse, A. (2018). Randomized controlled trial of adding telephone follow-up to an occupational rehabilitation program to increase work participation. *Journal of occupational rehabilitation*, 28(2), 265-278.

- Hara, K. W., Bjørngaard, J. H., Jacobsen, H. B., Borchgrevink, P. C., Johnsen, R., Stiles, T. C., . . . Woodhouse, A. (2018). Biopsychosocial predictors and trajectories of work participation after transdiagnostic occupational rehabilitation of participants with mental and somatic disorders: a cohort study. *BMC Public Health, 18*(1), 1014.
- Hara, K. W., Borchgrevink, P. C., Jacobsen, H. B., Fimland, M. S., Rise, M. B., Gismervik, S., & Woodhouse, A. (2018). Transdiagnostic group-based occupational rehabilitation for participants with chronic pain, chronic fatigue and common mental disorders. A feasibility study. *Disability and rehabilitation, 40*(21), 2516-2526.
- Hem, K.-G. (2000). *Økonomiske konsekvenser av sykefravær*. Oslo: SINTEF Unimed.
- Hem, K.-G. (2011). *Bedriftenes kostnader ved sykefravær*. Oslo: SINTEF Teknologi og samfunn.
- Henderson, M., Harvey, S. B., Øverland, S., Mykletun, A., & Hotopf, M. (2011). Work and common psychiatric disorders. *Journal of the Royal Society of Medicine, 104*(5), 198-207.
- Horowitz, L. M. (1979). On the cognitive structure of interpersonal problems treated in psychotherapy. *Journal of Consulting and Clinical Psychology, 47*(1), 5-15.
- Horowitz, L. M. (2004). *Interpersonal foundations of psychopathology*. Washington DC: American Psychological Association.
- Horowitz, L. M., French, R. D., Gani, M., & Lapid, J. S. (1980). The co-occurrence of semantically similar interpersonal problems. *Journal of Consulting and Clinical Psychology, 48*(3), 413-415. doi:10.1037/0022-006X.48.3.413
- Horowitz, L. M., Rosenberg, S. E., Baer, B. A., Ureño, G., & Villaseñor, V. S. (1988). Inventory of interpersonal problems: psychometric properties and clinical applications. *Clinical psychology: Science and practice, 56*(6), 885.
- Horowitz, L. M., Rosenberg, S. E., & Bartholomew, K. (1993). Interpersonal problems, attachment styles, and outcome in brief dynamic psychotherapy. *Journal of Consulting and Clinical Psychology, 61*(4), 549.
- Howard, I., Turner, R., Olkin, R., & Mohr, D. C. (2006). Therapeutic alliance mediates the relationship between interpersonal problems and depression outcome in a cohort of multiple sclerosis patients. *Journal of Clinical Psychology, 62*(9), 1197-1204.
- Jansson-Fröjmark, M. (2014). The work and social adjustment scale as a measure of dysfunction in chronic insomnia: reliability and validity. *Behavioural and cognitive psychotherapy, 42*(2), 186-198.
- Jaramillo, F., Mulki, J. P., & Boles, J. S. (2011). Workplace stressors, job attitude, and job behaviors: is interpersonal conflict the missing link? *Journal of Personal Selling & Sales Management, 31*(3), 339-356.
- Johansen, R., Melle, I., Iversen, V. C., & Hestad, K. (2013). Personality traits, interpersonal problems and therapeutic alliance in early schizophrenia spectrum disorders. *Comprehensive psychiatry, 54*(8), 1169-1176.
- Jones, D. N., & Paulhus, D. L. (2012). Differentiating the Dark Triad Within the Interpersonal Circumplex. In L. M. Horowitz & S. Strack (Eds.), *Handbook of Interpersonal Psychology* (pp. 249-267).
- Karterud, S., Wilberg, T., & Urnes, Ø. (2017). *Personlighetspsykiatri* (2 ed.). Oslo: Gyldendal Akademisk.

- Knardahl, S., Johannessen, H. A., Sterud, T., Harma, M., Rugulies, R., Seitsamo, J., & Borg, V. (2017). The contribution from psychological, social, and organizational work factors to risk of disability retirement: a systematic review with meta-analyses. *BMC Public Health*, *17*(1), 176. doi:10.1186/s12889-017-4059-4
- Knauf, M. T., & Schultz, I. Z. (2016). Current Conceptual Models of Return to Work. In I. Z. Schultz & R. J. Gatchel (Eds.), *Handbook of Return to Work: From Research to Practice* (pp. 27-51). Boston, MA: Springer.
- Kopta, S. M., Howard, K. I., Lowry, J. L., & Beutler, L. E. (1994). Patterns of symptomatic recovery in psychotherapy. *Journal of Consulting and Clinical Psychology*, *62*(5), 1009.
- Kwan, H. C., & Schultz, I. Z. (2016). Work accommodations: a social perspective. In *Handbook of Return to Work* (pp. 271-288): Springer.
- Lagerveld, S. E., Bültmann, U., Franche, R.-L., Van Dijk, F., Vlasveld, M. C., van der Feltz-Cornelis, C. M., . . . Van Der Klink, J. (2010). Factors associated with work participation and work functioning in depressed workers: a systematic review. *Journal of occupational rehabilitation*, *20*(3), 275-292.
- Landmark, T., Romundstad, P., Dale, O., Borchgrevink, P. C., & Kaasa, S. (2012). Estimating the prevalence of chronic pain: validation of recall against longitudinal reporting (the HUNT pain study). *Pain*, *153*(7), 1368-1373.
- Leary, T. (1957). *Interpersonal diagnosis of personality: A functional theory and methodology for personality evaluation*. New Jersey, United States: John Wiley & Sons.
- Leiknes, K. A., Dalsbø, T. K., & Siqveland, J. (2016). *Måleegenskaper ved den norske versjonen av Hospital Anxiety and Depression Scale (HADS)*. Oslo: Folkehelseinstituttet.
- Lim, D., Sanderson, K., & Andrews, G. (2000). Lost productivity among full - time workers with mental disorders. *The journal of mental health policy and economics*, *3*(3), 139-146.
- Locke, K. D. (2010). Circumplex Measures of Interpersonal constructs. In L. M. Horowitz & S. Strack (Eds.), *Handbook of interpersonal psychology: Theory, research, assessment, and therapeutic interventions* (pp. 313-324). Hoboken, NJ: John Wiley & Sons.
- Loisel, P., Buchbinder, R., Hazard, R., Keller, R., Scheel, I., Van Tulder, M., & Webster, B. (2005). Prevention of work disability due to musculoskeletal disorders: the challenge of implementing evidence. *Journal of occupational rehabilitation*, *15*(4), 507-524.
- Marhold, C., Linton, S. J., & Melin, L. (2001). A cognitive-behavioral return-to-work program: effects on pain patients with a history of long-term versus short-term sick leave. *Pain*, *91*(1-2), 155-163.
- Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, *68*(3), 438-450. doi:10.1037/0022-006X.68.3.438
- McFarquhar, T., Luyten, P., & Fonagy, P. (2018). Changes in interpersonal problems in the psychotherapeutic treatment of depression as measured by the Inventory of Interpersonal Problems: A systematic review and meta-analysis. *Journal of Affective Disorders*, *226*, 108-123. doi:10.1016/j.jad.2017.09.036
- McMillan, J. H., & Schumacher, S. (2001). *Research in Education: A Conceptual Introduction*. New York: Wesley Longman. In: Inc.
- Menard, S. (1995). *Applied logistic regression analysis*. Thousand Oaks, CA: Sage.

- Mikkelsen, M. B., & Rosholm, M. (2018). Systematic review and meta-analysis of interventions aimed at enhancing return to work for sick-listed workers with common mental disorders, stress-related disorders, somatoform disorders and personality disorders. *Occupational and environmental medicine*, 75(9), 675-686.
- Monsen, J. T., Hagtvet, K. A., Havik, O. E., & Eilertsen, D. E. (2006). Circumplex structure and personality disorder correlates of the Interpersonal Problems Model (IIP-C): Construct validity and clinical implications. *Psychological Assessment*, 18(2), 165.
- Mundt, J. C., Marks, I. M., Shear, M. K., & Greist, J. M. (2002). The Work and Social Adjustment Scale: a simple measure of impairment in functioning. *British Journal of Psychiatry*, 180(5), 461-464. doi:10.1192/bjp.180.5.461
- Muran, J. C., Segal, Z. V., Samstag, L. W., & Crawford, C. E. (1994). Patient pretreatment interpersonal problems and therapeutic alliance in short-term cognitive therapy. *Journal of Consulting and Clinical Psychology*, 62(1), 185.
- Myers, R. H. (1990). *Classical and modern regression with applications* (Vol. 2): Duxbury press Belmont, CA.
- Mæland, S., Werner, E. L., Rosendal, M., Jonsdottir, I. H., Magnussen, L. H., Lie, S. A., . . . Eriksen, H. R. (2013). Sick-leave decisions for patients with severe subjective health complaints presenting in primary care: a cross-sectional study in Norway, Sweden, and Denmark. *Scandinavian journal of primary health care*, 31(4), 227-234.
- Mæland, S., Werner, E. L., Rosendal, M., Jonsdottir, I. H., Magnussen, L. H., Ursin, H., & Eriksen, H. R. (2012). Diagnoses of patients with severe subjective health complaints in Scandinavia: a cross sectional study. *ISRN Public Health*, 2012.
- Nielsen, M. B., Emberland, J. S., & Knardahl, S. (2017). Workplace bullying as a predictor of disability retirement: a prospective registry study of Norwegian employees. *Journal of occupational and environmental medicine*, 59(7), 609.
- Norges lover. (1997). Lov om folketrygd, 1997-02-28 nr 19.
- Norwegian Health and Welfare Service. (2019, December 5). Sick leave statistics. Retrieved from <https://www.nav.no/no/NAV+og+samfunn/Statistikk/Sykefravar+-+statistikk/Sykefravar>
- OECD. (2010). *Sickness, disability and work: Breaking the barriers: A synthesis of findings across OECD countries*: OECD Publishing.
- Ose, S. O., Dyrstad, K., Brattlid, I., Slettebak, R., Jensberg, H., Mandal, R., . . . Pettersen, I. (2013). *Oppfølging av sykmeldte-fungerer dagens regime?* Trondheim: SINTEF Teknologi og samfunn, avd. Helse.
- Pallant, J. (2010). *SPSS Survival Manual: A step by step guide to data analysis using SPSS*. Berkshire UK: McGraw-Hill Education.
- Peng, C.-Y. J., Lee, K. L., & Ingersoll, G. M. (2002). An introduction to logistic regression analysis and reporting. *The journal of educational research*, 96(1), 3-14.
- Reich, J., Yates, W., & Nduaguba, M. (1989). Prevalence of DSM-III personality disorders in the community. *Social Psychiatry and Psychiatric Epidemiology*, 24(1), 12-16.
- Reme, S. E., Grasdahl, A. L., Løvrvik, C., Lie, S. A., & Øverland, S. (2015). Work-focused cognitive-behavioural therapy and individual job support to increase work participation in

- common mental disorders: a randomised controlled multicentre trial. *Occupational and environmental medicine*, 72(10), 745-752.
- Rosenthal, R. N., Muran, J. C., Pinsker, H., Hellerstein, D., & Winston, A. (1999). Interpersonal change in brief supportive psychotherapy. *The Journal of psychotherapy practice and research*, 8(1), 55.
- Rueda, S., Chambers, L., Wilson, M., Mustard, C., Rourke, S. B., Bayoumi, A., . . . Lavis, J. (2012). Association of returning to work with better health in working-aged adults: a systematic review. *American journal of public health*, 102(3), 541-556.
- Rugulies, R., Aust, B., & Pejtersen, J. H. (2010). Do psychosocial work environment factors measured with scales from the Copenhagen Psychosocial Questionnaire predict register-based sickness absence of 3 weeks or more in Denmark? *Scandinavian journal of public health*, 38(Suppl. 3), 42-50.
- Ruiz, M. A., Pincus, A. L., Borkovec, T. D., Echemendia, R. J., Castonguay, L. G., & Ragusea, S. A. (2004). Validity of the inventory of interpersonal problems for predicting treatment outcome: an investigation with the Pennsylvania Practice Research Network. *Journal of personality assessment*, 83(3), 213-222.
- Ryum, T., Jacobsen, H. B., Borchgrevink, P. C., Landrø, N. I., & Stiles, T. C. (2019). Interpersonal problems as a predictor of pain catastrophizing in patients with chronic pain. *Scandinavian Journal of Pain*, 20(1), 51-59.
- Ryum, T., Stiles, T. C., Svartberg, M., & McCullough, L. (2010). The role of transference work, the therapeutic alliance, and their interaction in reducing interpersonal problems among psychotherapy patients with Cluster C personality disorders. *Psychotherapy: Theory, Research, Practice, Training*, 47(4), 442.
- Ryum, T., Stiles, T. C., & Vogel, P. A. (2007). Effektivitet ved psykoterapeutisk behandling gjort av viderekomne studenter. *Tidsskrift for Norsk psykologforening*, 44(8), 1005-1011.
- Safran, J. D., & Muran, J. C. (2000). *Negotiating the therapeutic alliance : a relational treatment guide*. New York: Guilford Press.
- Schultz, I. Z., Krupa, T., & Rogers, E. S. (2011). Best Practices in Accommodating and Retaining Persons with Mental Health Disabilities at Work: Answered and Unanswered Questions. In I. Z. Schultz & E. S. Rogers (Eds.), *Work Accommodation and Retention in Mental Health* (pp. 445-465). New York: Springer.
- Skodol, A. E., Gunderson, J. G., McGlashan, T. H., Dyck, I. R., Stout, R. L., Bender, D. S., . . . Morey, L. C. (2002). Functional impairment in patients with schizotypal, borderline, avoidant, or obsessive-compulsive personality disorder. *American Journal of Psychiatry*, 159(2), 276-283.
- Soeteman, D. I., Roijen, L. H.-v., Verheul, R., & Busschbach, J. J. (2008). The economic burden of personality disorders in mental health care. *Journal of Clinical Psychiatry*, 69(2), 259.
- Statistics Norway. (2019, March 29). Sickness absence. Retrieved from <https://www.ssb.no/en/arbeid-og-lonn/statistikker/sykefratot>
- Steenstra, I., Verbeek, J., Heymans, M., & Bongers, P. (2005). Prognostic factors for duration of sick leave in patients sick listed with acute low back pain: a systematic review of the literature. *Occupational and environmental medicine*, 62(12), 851-860.
- Sullivan, H. S. (1950). The illusion of personal individuality. *Psychiatry*, 13(3), 317-332.

- Sullivan, M. J., Thorn, B., Haythornthwaite, J. A., Keefe, F., Martin, M., Bradley, L. A., & Lefebvre, J. C. (2001). Theoretical perspectives on the relation between catastrophizing and pain. *The Clinical journal of pain, 17*(1), 52-64.
- Susegg, E., & Vatne, K. (2006). *Psykologisk behandling som virkemiddel for reduksjon av sykefravær, spesialistoppgave i klinisk psykologi*. Norsk psykologforening.
- Tjulin, Å., & MacEachen, E. (2016). The Importance of Workplace Social Relations in the Return to Work Process: A Missing Piece in the Return to Work Puzzle? In I. Z. Schultz & R. J. Gatchel (Eds.), *Handbook of Return to Work: From Research to Practice* (pp. 81-97). Boston, MA: Springer.
- Tjulin, Å., Maceachen, E., & Ekberg, K. (2010). Exploring Workplace Actors Experiences of the Social Organization of Return-to-Work. *Journal of occupational rehabilitation, 20*(3), 311-321. doi:10.1007/s10926-009-9209-9
- Trimpey, M., & Davidson, S. (1994). Chaos, perfectionism, and sabotage: personality disorders in the workplace. *Issues in mental health nursing, 15*(1), 27-36.
- Ung, E. M., Erichsen, C. B., Poulsen, S., Lau, M. E., Simonsen, S., & Davidsen, A. H. (2017). The association between interpersonal problems and treatment outcome in patients with eating disorders. *J Eat Disord, 5*, 53. doi:10.1186/s40337-017-0179-6
- Urnes, Ø., & Urnes, A.-G. (2018). Sosial kognisjon. In A.-G. Urnes (Ed.), *Den interaktive hjernen hos barn og unge* (pp. 81-90). Oslo: Gyldendal.
- Vethe, D., Kallestad, H., Jacobsen, H. B., Landro, N. I., Borchgrevink, P. C., & Stiles, T. C. (2018). The Relationship Between Improvement in Insomnia Severity and Long-Term Outcomes in the Treatment of Chronic Fatigue. *Frontiers in Psychology, 9*. doi:10.3389/fpsyg.2018.01764
- von Tetzchner, S. (2012). *Utviklingspsykologi* (2 ed.). Oslo: Gyldendal.
- Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta psychiatrica scandinavica, 67*(6), 361-370.
- Aagestad, C., Johannessen, H. A., Tynes, T. M., Gravseth, H. M. M., & Sterud, T. (2014). Work-Related Psychosocial Risk Factors for Long-Term Sick Leave: A Prospective Study of the General Working Population in Norway. *Journal of Occupational & Environmental Medicine, 56*(8), 787-793.

Appendix A

Inventory of Interpersonal Problems (IIP-64)

Vennligst les hvert utsagn i listen nedenfor og tre påfølgende sidene. Vurder om det har vært et problem for deg i forhold til andre mennesker. Kryss av på alternativet som beskriver hvor plagsomt problemet har vært.

Det er vanskelig for meg å:

	Ikke i det hele tatt (0)	Litt (1)	Moderat (2)	Ganske mye (3)	Veldig mye (4)
1 . Stole på andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2 . Si «nei» til andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3 . Delta i grupper	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4 . Holde ting hemmelig for andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5 . La andre mennesker få vite hva jeg har behov for	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6 . Be noen om å slutte å plage meg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7 . Presentere meg for nye mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8 . Konfrontere folk med problemer som oppstår	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9 . Hevde mine egne meninger overfor andre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10 . La andre få vite når jeg er sint	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11 . Forplikte meg overfor en annen person i lang tid fremover	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12 . Være sjef over en annen person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13 . Være synlig sint mot andre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14 . Omgås andre mennesker på en sosial måte	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15 . Vise andre mennesker at jeg er glad i dem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16 . Komme overens med folk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17 . Forstå en annens synspunkt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18 . Gi direkte uttrykk for mine følelser overfor andre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19 . Være bestemt når jeg trenger å være det	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20 . Oppleve en følelse av at jeg elsker en annen person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21 . Sette grenser overfor andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22 . Støtte en annen i å nå sine mål	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23 . Føle nærhet til andre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24 . Virkelig bry seg om problemer andre mennesker har	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25 . Krangle med en annen person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26 . Tilbringe tid alene	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27 . Gi en annen person en gave	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

28 . Tillate meg å føle sinne overfor noen jeg liker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29 . Sette en annens behov fremfor mine egne	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30 . Holde meg unna andre folks anliggender	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31 . Ta imot råd og ordrer fra folk som har myndighet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32 . Glede meg over et annet menneskes lykke	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33 . Be andre mennesker om å omgås meg sosialt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34 . Føle meg sint på andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35 . Åpne meg og snakke om følelsene mine til andre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36 . Tilgi noen jeg har vært sint på	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37 . Ta hensyn til mitt eget beste når en annen blir oppskjørtet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38 . Si mine egne meninger uten å bekymre meg for hva den andre føler	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39 . Være trygg på meg selv når jeg er sammen med andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

På de to neste sidene er en liste med problemer som folk har i omgang med andre mennesker. Vennligst les hvert av disse og vurder om dette problemet har vært et problem for deg med hensyn til en eller annen betydningsfull person i ditt liv. Kryss av på alternativet som beskriver hvordan problemet har vært.

Følgende er ting du gjør for mye:

	Ikke i det hele tatt (0)	Litt (1)	Moderat (2)	Ganske mye (3)	Veldig mye (4)
40 . Jeg krangler for mye med andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41 . Jeg føler meg for ansvarlig for å løse andres problemer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42 . Jeg lar meg for lett overtale av andre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43 . Jeg er for åpen overfor andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44 . Jeg er for selvstendig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45 . Jeg er for aggressiv i forhold til andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46 . Jeg prøver for sterkt å tekkes andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47 . Jeg gjør for mye ablegøyer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48 . Jeg ønsker for mye å bli lagt merke til	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49 . Jeg stoler for mye på andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50 . Jeg prøver for mye å kontrollere andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51 . Jeg lar for ofte andres behov gå foran mine egne	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52 . Jeg prøver for mye å forandre andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53 . Jeg er for godtroende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

54 . Jeg er altfor generøs overfor andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55 . Jeg er redd for andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
56 . Jeg er for mistenksom overfor andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
57 . Jeg manipulerer andre mennesker for mye til å oppnå det jeg vil	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
58 . Jeg forteller for mye om personlige ting til andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
59 . Jeg blir for ofte uenig med andre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
60 . Jeg distanserer meg altfor mye fra andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
61 . Jeg lar andre mennesker utnytte meg for lett	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
62 . Jeg føler meg for ofte flau overfor andre mennesker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
63 . Jeg lar en annen persons ulykkelighet for lett gå inn på meg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
64 . Jeg ønsker for ofte hevn over andre	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Hospital Anxiety and Depression Scale (HADS)

Vi er klar over at følelser spiller en stor rolle ved de fleste sykdommer. Hvis vi vet mer om følelser, vil han/hun bli bedre i stand til å hjelpe deg. Her kommer noen spørsmål om hvorledes du føler deg. For hvert spørsmål setter du kryss for ett av de fire svarene som best beskriver dine følelser den siste uken. Ikke tenk for lenge på svaret - de spontane svarene er best.

. Jeg føler meg nervøs og urolig	<input type="radio"/> Mesteparten av tiden (3) <input type="radio"/> Mye av tiden (2) <input type="radio"/> Fra tid til annen (1) <input type="radio"/> Ikke i det hele tatt (0)
. Jeg gleder meg fortsatt over tingene slik jeg pleide før	<input type="radio"/> Avgjort like mye (0) <input type="radio"/> Ikke fullt så mye (1) <input type="radio"/> Bare lite grann (2) <input type="radio"/> Ikke i det hele tatt (3)
. Jeg har en urofølelse som om noe forferdelig vil skje	<input type="radio"/> Ja, og noe svært ille (3) <input type="radio"/> Ja, ikke så veldig ille (2) <input type="radio"/> Litt, bekymrer meg lite (1) <input type="radio"/> Ikke i det hele tatt (0)
. Jeg kan le og se det morsomme i situasjoner	<input type="radio"/> Like mye nå som før (0) <input type="radio"/> Ikke like mye nå som før (1) <input type="radio"/> Avgjort ikke som før (2) <input type="radio"/> Ikke i det hele tatt (3)
. Jeg har hodet fullt av bekymringer	<input type="radio"/> Veldig ofte (3) <input type="radio"/> Ganske ofte (2) <input type="radio"/> Av og til (1) <input type="radio"/> En gang i blant (0)
. Jeg er i godt humør	<input type="radio"/> Aldri (3) <input type="radio"/> Noen ganger (2) <input type="radio"/> Ganske ofte (1) <input type="radio"/> For det meste (0)
. Jeg kan sitte i fred og ro og kjenne meg avslappet	<input type="radio"/> Ja, helt klart (0) <input type="radio"/> Vanligvis (1) <input type="radio"/> Ikke så ofte (2) <input type="radio"/> Ikke i det hele tatt (3)

. Jeg føler meg som om alt går langsommere

- Nesten hele tiden (3)
- Svært ofte (2)
- Fra tid til annen (1)
- Ikke i det hele tatt (0)

. Jeg føler meg urolig som om jeg har sommerfugler i magen

- Ikke i det hele tatt (0)
- Fra tid til annen (1)
- Ganske ofte (2)
- Svært ofte (3)

. Jeg bryr meg ikke lenger om hvordan jeg ser ut

- Ja, jeg har sluttet å bry meg (3)
- Ikke som jeg burde (2)
- Kan hende ikke nok (1)
- Bryr meg som før (0)

. Jeg er rastløs som om jeg stadig må være aktiv

- Uten tvil svært mye (3)
- Ganske mye (2)
- Ikke så veldig mye (1)
- Ikke i det hele tatt (0)

. Jeg ser med glede frem til hendelser og ting:

- Like mye som før (0)
- Heller mindre enn før (1)
- Avgjort mindre enn før (2)
- Nesten ikke i det hele tatt (3)

. Jeg kan plutselig få en følelse av panikk

- Uten tvil svært ofte (3)
- Ganske ofte (2)
- Ikke så veldig ofte (1)
- Ikke i det hele tatt (0)

. Jeg kan glede meg over gode bøker, radio og TV

- Ofte (0)
- Fra tid til annen (1)
- Ikke så ofte (2)
- Svært sjelden (3)

Chalder Fatigue Scale

Vi vil gjerne vite om du har følt deg sliten, svak eller i mangel av overskudd den siste måned. Vennligst besvar alle spørsmålene ved å krysse av for det svaret du synes passer best for deg. Vi ønsker at du besvarer alle spørsmålene selv om du ikke har hatt slike problemer. Vi spør om hvordan du har følt deg i det siste og ikke hvordan du følte deg for lenge siden. Hvis du har følt deg sliten lenge, ber vi om at du sammenligner deg med hvordan du følte deg sist du var bra.

. 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 søvnnig eller døsigg?

Mindre enn vanlig Ikke mer enn vanlig
 Mer enn vanlig Mye mer enn vanlig

. Har du problemer med å komme i gang 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

Insomnia Severity Index (ISI)

Vennligst svar på disse spørsmålene om søvnen din.

Vær vennlig å angi hvor store vansker du har med søvnen nå for tiden (de siste 2 ukene)?

	Ingen	Milde	Moderate	Alvorlige	Veldige
a . Vansker med å sovne inn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b . Vansker med å holde meg sovende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c . Vansker med at jeg våkner for tidlig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2 . Hvor fornøyd/misfornøyd er du med ditt nåværende søvnmønster?

Veldig fornøyd Fornøyd
 Nøytral Misfornøyd
 Veldig misfornøyd

3 . I hvilken grad mener du at ditt søvnproblem forstyrrer din daglige fungering (for eksempel tretthet på dagtid, evne til å fungere på arbeid/daglige gjøremål, konsentrasjon, hukommelse, humør, etc.)?

Forstyrrer ikke i det hele tatt
 Litt Noe Mye
 Forstyrrer i veldig stor grad

4 . Hvor synlig tror du det er for andre at du har søvnproblemer som svekker din livskvalitet?

Ikke synlig i det hele tatt
 Litt Noe Mye
 Synlig i veldig stor grad

5 . Hvor bekymret/plaget er du over ditt nåværende søvnproblem?

Ikke bekymret i det hele tatt
 Litt Noe Mye
 Bekymret i veldig stor grad

The Short Form-8 (SF-8) health survey, item 4

4. Hvor sterke kroppslige smerter har du hatt i løpet av den siste uka?

- Ingen Meget svake Svake Moderate Sterke Meget sterke

The Work and Social Adjustment Scale (WSAS), item 5

5. På grunn av lidelsen min er min evne til å etablere og vedlikeholde **relasjoner til andre** svekket

- 0 (Ikke i det hele tatt) 1 (Litt) 2 3 (Klart) 4 5 (Markant)
 6 7 (Veldig alvorlig svekket) 8

Appendix B

Table B1
*Interpersonal problems in the study population (n = 189) and the high HDIP-
scorers (n = 28)*

	Total sample		High-HDIP	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Dominant	0.49	0.47	1.14	0.63
Vindictive	0.47	0.52	1.33	0.69
Cold	0.66	0.63	1.64	0.61
Socially avoidant	0.97	0.78	1.74	0.88
Non-assertive	1.42	2.07	2.02	1.02
Exploitable	1.47	0.84	1.97	1.00
Overly nurturant	1.39	0.81	1.90	0.86
Intrusive	0.65	0.48	1.12	0.52

Note. Interpersonal problems measured by the Inventory of Interpersonal Problems (IIP) by Alden, Wiggins & Pincus (1990) and Horowitz et al. (1988).

