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RESEARCH ARTICLE

Socioeconomic status, psychotherapy duration, and return to work from disability due to common mental disorders

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ABSTRACT

Objective Low socioeconomic status (SES) is a risk factor for work disability due to common mental disorders (CMDs), one possible reason being unequal use of services. Psychotherapy is an evidence-based treatment for CMDs. This study examines socioeconomic and sociodemographic differences in psychotherapy attendance and an association of psychotherapy duration with return to work (RTW).

Methods The study subjects ($N = 12,263$) were all Finnish citizens granted a disability pension (DP) due to CMDs in 2010–2012. Numbers of psychotherapy sessions (maximum 200) were collected from the nine-year interval around the DP grant. Socioeconomic and sociodemographic differences in psychotherapy duration (dependent variable) among DP recipients were studied using multinomial logistic regression models, likewise, the association between psychotherapy duration and RTW (dependent variable) among temporary DP recipients was examined.

Results Higher SES, female gender, and younger age were positively associated with attending longer psychotherapies and surpassing the early treatment termination level (>10 sessions). Attending 11–60 psychotherapy sessions was positively associated with full RTW and partial RTW, whereas longer psychotherapies were not. Early termination was positively associated with partial RTW only.

Conclusion This study demonstrates varying tendencies among CMD patients from different backgrounds to attend long rehabilitative psychotherapies, which may create inequalities in RTW.

Keywords: psychotherapy adherence; common mental disorder; disability; socioeconomic status; return to work

Clinical or methodological significance of this article: The public rehabilitation system should ensure using the person's full potential to return to work or studies. Our study shows that not only the need but also other factors have a significant role in determining the duration of psychotherapy. Further research is needed to identify those patients who would benefit from psychotherapy but do not receive it or are at risk of terminating it prematurely.

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Common mental disorders (CMDs), including depression, anxiety and stress-related disorders, are markedly prevalent globally (Finnes et al., 2019; GBD Disease and Injury Incidence and Prevalence Collaborators, 2018). Depressive and anxiety disorders have a significant negative impact on work functioning (Plaisier et al., 2010). Besides losses in productivity of labour, mental disorders constitute a significant financial burden on national economies due to health care expenditure and social benefits (Organisation for Economic Co-operation and Development, 2015).

Low socioeconomic status (SES) is associated with a higher prevalence of CMDs (Fryers et al., 2003), psychiatric work disability, and lower return to work (RTW) rate after a period of work disability (de Vries et al., 2018; Ervasti et al., 2013; Laaksonen & Gould, 2015; Rissanen et al., 2021; Victor et al., 2018), when low SES is indicated by education (de Vries et al., 2018; Ervasti et al., 2013; Laaksonen & Gould, 2015; Rissanen et al., 2021; Victor et al., 2018), occupational position (Ervasti et al., 2013; Laaksonen & Gould, 2015; Rissanen et al., 2021; Victor et al., 2018), income (Rissanen et al., 2021) and accommodation (Ervasti et al., 2013). Conversely, some studies have reported high occupational position (Karolaakso et al., 2020) and high education (Nieuwenhuijsen et al., 2006) to be risk factors for work disability due to mental disorders, which may be explained by correspondingly higher cognitive job demands (de Vries et al., 2018; Samuelsson et al., 2013). Most research, however, has produced evidence of an inverse socioeconomic gradient in mental health work disability (de Vries et al., 2018; Ervasti et al., 2013; Laaksonen & Gould, 2015; Rissanen et al., 2021; Victor et al., 2018), for which one explanation is the “inverse care law”, according to which the availability of appropriate medical and social care varies inversely with the need for this in the population, leading to lower treatment rates among disadvantaged groups (Tudor Hart, 1971). Besides availability, factors related to the use of health services may also explain the inverse socioeconomic gradient in psychiatric work disability. Psychotherapy is an evidence-based treatment for CMDs and often aims to improve working ability (Nieuwenhuijsen et al., 2020). Low SES is associated with lower psychotherapy attendance (Epping et al., 2017; Leppänen et al., 2022) and also with mixed evidence with poorer psychotherapy outcomes measured in terms of symptom alleviation (Finegan et al., 2018). The association of SES with adherence to psychotherapy is not clear; a review in the 1990s concluded that low SES was associated with psychotherapy dropout, which was argued to be mostly attributable to educational disadvantages of the low-SES clients leading to divergent perspectives,

values and expectations from those of their therapists (Reis & Brown, 1999). However, more recent research has not confirmed this association (Firth et al., 2022; Swift & Greenberg, 2012).

The targets of psychotherapy are various and depend on the stakeholder. In the literature, the outcome is most often measured in terms of alleviation of symptoms, whereas return to work (RTW) from a period of work disability is often among the patient-defined targets and also helps to reduce the societal burden of mental disorders (Cuijpers, 2019). Alleviation of symptoms and regaining of working ability are not parallel in studies; alleviation of symptoms may facilitate but is not necessarily sufficient for a successful RTW (Ejebj et al., 2014; Finnes et al., 2019). According to systematic reviews, psychological interventions improve overall working ability among CMD patients, but the evidence is weak (Finnes et al., 2019; Nieuwenhuijsen et al., 2020; Salomonsson et al., 2018). Recent studies from the Nordic countries (Knapstad et al., 2020; Peutere et al., 2022; Rissanen et al., 2021) suggest a positive association between psychotherapy and better working ability outcomes.

On a population level, no optimal duration of psychotherapy has been established (Knekt et al., 2008; Robinson et al., 2020). A systematic review by Robinson et al (Robinson et al., 2020) found evidence for often faster alleviation of symptoms in the initial phase of treatment, and optimal number of sessions ranged between 4 and 26 sessions in routine settings, while inclusion of chronic and psychotic symptoms yielded an optimal duration ranging between 4 and 54 sessions. However, at an individual level, the patient’s suitability as a candidate to receive psychotherapeutic interventions affects the outcome; some patients have a rapid response, whereas others require longer treatments to achieve remission (Alanne et al., 2021; Robinson et al., 2020). Knekt et al (Knekt et al., 2008, 2016) found that for people suffering from depression or anxiety, short-term therapies yielded faster benefits, but long-term therapies had longer-lasting effects (up to 10 years in follow-up), and they studied both symptoms and working ability.

Receiving benefits from psychotherapy also depends on the severity of individual psychopathology; in a Norwegian study, patients with mostly severe psychopathology who received 80–120 psychotherapy sessions derived the greatest total predicted magnitude of change in both outcome domains: symptoms and interpersonal functioning. Generally, patients with more severe conditions who received longer treatments experienced slower rates of change but generally also greater overall benefits. (Nordmo et al., 2021)

Mental health services are mostly publicly funded in Finland (Patana, 2014). Usually, a CMD patient meets either a psychologist or psychiatric nurse or attends web-based psychotherapy lasting for at least 3 months, as a first-line psychosocial treatment. Rehabilitative psychotherapy may be applied, if the symptoms persist and the person's working or studying ability is impaired, and based on a psychiatrist's statement rehabilitative psychotherapy is seen as necessary to support or improve the person's working or studying ability (Patana, 2014). Psychotherapy is provided by private services and is partially compensated by the Finnish Social Insurance Institution (SII) (Patana, 2014). Psychotherapy may also be self-funded by the client or in rare cases paid for by hospital districts (Huttunen & Kalska, 2015). Financial support for rehabilitative psychotherapy is available for one to two sessions per week and for one to three years, meaning up to 80 sessions per year and 200 sessions in three years (Huttunen & Kalska, 2015; Patana, 2014). In over 90% of cases, psychotherapy is granted due to CMDs, and the duration of psychotherapy is on average one year for about 24/30% (females/males), two years for about 27% (both genders), and three years for 49/43% (females/males) (Tuulio-Henriksson et al., 2019).

In the Finnish system, before a disability pension (DP) is granted a person usually spends 300 working days on sickness benefit. DP is granted as temporary if the individual is deemed potentially able to return to work. Temporary DP (tDP) in some cases precedes the permanent DP, which is considered a decisive solution. Rehabilitative psychotherapy is intended to support the patient's ability to study or work and is hence offered proactively, before a permanent DP. According to a study by the SII, only 6% of psychotherapy applicants were already on DP at the time of applying for psychotherapy (Tuulio-Henriksson et al., 2019).

To sum up, there is robust evidence that low SES is associated with a higher prevalence of CMDs, psychiatric work disability and lower RTW. There is also evidence of an association between low SES and lower attendance at psychotherapies and poorer outcomes. However, to what extent SES is associated with attendance at longer psychotherapies and whether psychotherapy duration is associated with RTW has not yet been studied. In the present study we aimed to investigate the use of rehabilitative psychotherapy among CMD patients before being granted a permanent DP. As presented in Figure 1, we studied the extent to which socioeconomic and sociodemographic factors and use of vocational rehabilitation were associated with duration of psychotherapy, and how duration of psychotherapy,

together with other factors, was associated with RTW among tDP recipients. Based on earlier research, hypothesis 1 is that of SES factors, at least lower education is associated with poorer adherence leading to shorter psychotherapy duration in general. Sociodemographic factors, especially age and gender, are also supposed to be associated with psychotherapy adherence. Hypothesis 2 is that RTW is associated with longer treatment duration considering the severity of the psychopathology of our study subjects. This study is part of the RETIRE research project, which studies risk factors for psychiatric DPs and identifies effective processes in the service system to prevent premature retirement (Karolaakso et al., 2020; Leppänen et al., 2022; Pirkola et al., 2019; Rissanen et al., 2021).

Data and Methods

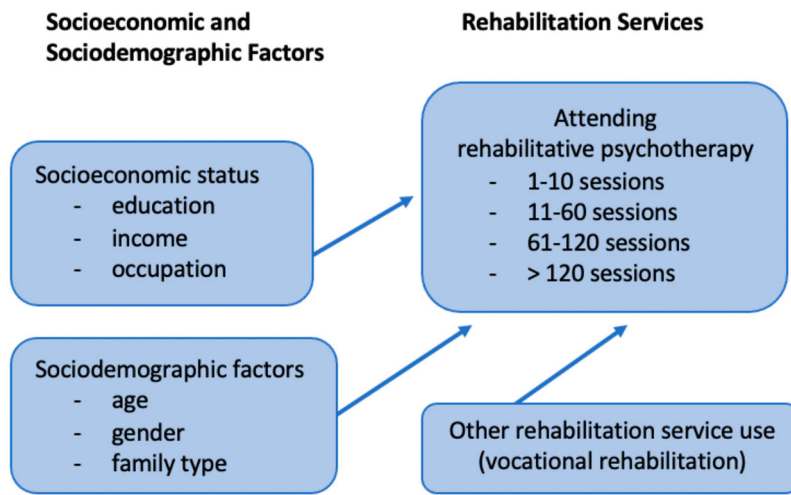
Study Population

This is a register study of CMD patients aiming to investigate the associations between SES and psychotherapy duration, and also between psychotherapy duration and RTW. The dataset included all Finnish citizens granted a DP for the first time between 2010 and 2012 due to CMD diagnoses (ICD-10: F32–F34 and F40–43, N = 12,263), of which 89.8% were depressive disorders and 10.2% anxiety disorders, also including obsessive-compulsive disorder and PTSD. Diagnoses were recorded from the decisions granting DPs and the main diagnosis leading to DP was used. The data were obtained from the registers of the SII, the Finnish Centre for Pensions, the National Institute for Health and Welfare, and Statistics Finland. The data combined DP statistics with socioeconomic and sociodemographic information, number of yearly psychotherapy sessions and information on vocational rehabilitation received by the study subjects. Each study subject was followed from five years before to three years after the year in which the DP was granted.

Rehabilitative Psychotherapy

The data on rehabilitative psychotherapy visits were collected in the nine-year period extending from five years prior to the year when DP was granted to three years after the first DP. The nine-year periods varied between 2005–2015 depending on the DP year (2010–2012) of each person. The psychotherapy visits frequently occurred in at least two different calendar years and we only knew the number of annual visits. Therefore, those study subjects whose psychotherapy was realized only in the first or last

A. HYPOTHESIS 1. Analysis of rehabilitative psychotherapy.



B. HYPOTHESIS 2. RTW Analysis.

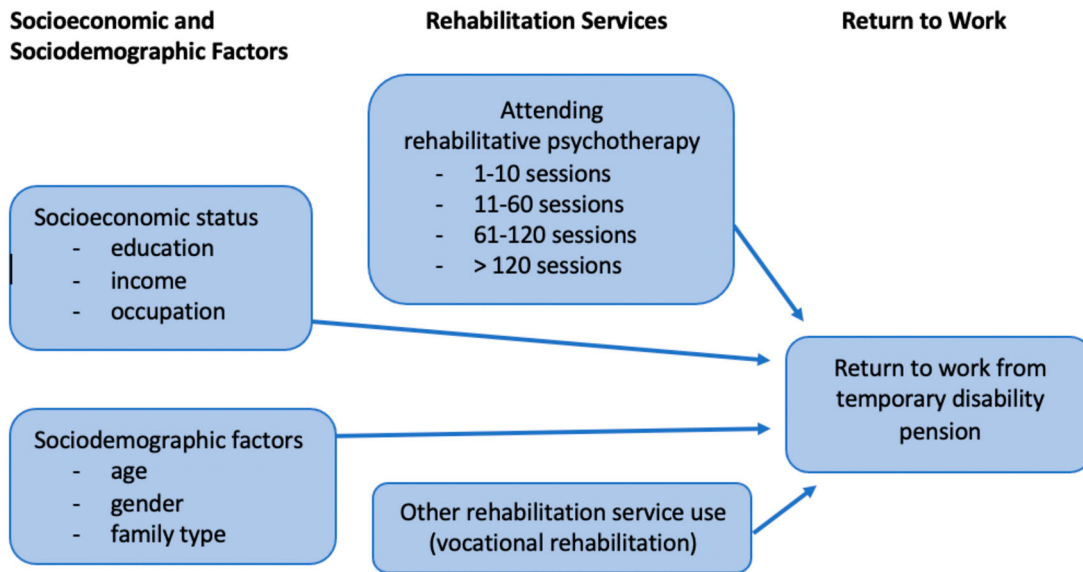


Figure 1. Hypothesized associations between socioeconomic and sociodemographic factors, service use and RTW.

year of the study period were excluded from the analysis to avoid bias by only taking account of partial information about psychotherapy visits. Our previous study (Leppänen et al., 2022) showed that psychotherapy is concentrated around the DP year, and that is why further bias about the psychotherapy sessions extending over the study period remains small. In the literature psychotherapy dropout is defined in various ways: by attending less than a specified number of sessions, failure to complete the treatment protocol, missed appointments, therapist’s judgment

or discontinuation of therapy prior to recovering from the impairment (Swift & Greenberg, 2012). There is some evidence that in routine therapies even rapid responders usually need at least four sessions to show signs of improvement (Robinson et al., 2020). Considering the time-consuming process of finding a therapist in Finland due to a shortage of psychotherapists, as well as the nature of rehabilitative psychotherapies aimed to last from one to three years, we considered ten sessions or less as early treatment termination. Continuing psychotherapy

depends on the bilateral decisions of the psychotherapist and the client and is mostly made based on the therapeutic alliance and therapy progress, and the reasons for termination are not recorded in the registers. Overall, psychotherapy sessions were classified into four categories: 1–10 sessions, 11–60 sessions, 61–120 sessions and over 120 sessions.

Return to Work

Some of the study subjects on tDP are able to return to work. The RETIRE research project has previously defined three clusters of patterns by which individuals returned to work in the follow-up of three years: full RTW, partial RTW and no RTW (Rissanen et al., 2021). In the full RTW group, individuals returned to work during the first or second year after tDP and they continued at work during the three-year follow-up. In the partial RTW group, individuals returned to work, but only for a short period and mostly only during one year in the follow-up time. In the no RTW group, individuals continued on DP.

Socioeconomic and Sociodemographic Factors

The socioeconomic and sociodemographic factors have been described in greater detail elsewhere (Karolaakso et al., 2020; Leppänen et al., 2022) and are summarized here. Factors representing dimensions of SES were education, income, and occupational status. The values were taken from one year before the granting of a DP.

Education was categorized into five groups in accordance with the classification of Statistics Finland: basic level, upper secondary, short-cycle tertiary, lower degree tertiary, and higher degree tertiary education. Average yearly income was calculated for each person by dividing the income of the person's household by the OECD consumption unit with weights of 0.3–1 per person in the household ("Consumption Unit | Concepts | Statistics Finland," 2022). Income was divided into quintiles: lowest (less than 14,454 euros), middle-lower (14,455e–20,468e), middle (20,469e–25,931e), middle-higher (25,932e–33,254e) and highest (more than 33,255e). Occupational status was classified into seven groups in accordance with the classification of Statistics Finland: student, unemployed, blue-collar worker, lower and upper white-collar worker, entrepreneur, and agriculture and forestry entrepreneur. In this study, we combined the last two categories into a single category of entrepreneurs, because of the small number of study subjects in the category of agriculture and forestry entrepreneurs. Sociodemographic factors were gender (male/female), age categorized into five groups (18–25, 26–

35, 36–45, 46–55 and 56–65 years), and family type categorized into four groups (living alone, couple, single parent and couple with children).

Vocational Rehabilitation

Vocational rehabilitation is offered by the SII or a pension insurance company depending on the patient's working history. In this study, providers were not considered separately, because the content of the vocational rehabilitation is more dependent on the person's situation than the provider. Vocational rehabilitation may include for example rehabilitation assessment, education, training tryouts, rehabilitation courses, start-up grants for self-employment, and support for integration into work ("Vocational Rehabilitation - Kela.Fi," 2022). Vocational rehabilitation was used in this study to reflect the use of rehabilitation services other than psychotherapy, and the possible association between this, psychotherapy duration and RTW.

Statistical Analysis

Multinomial logistic regression was used to detect associations between socioeconomic and sociodemographic factors, vocational rehabilitation and the number of psychotherapy sessions attended during the nine-year period, when the reference category was no psychotherapy. Separate univariate models were created for each independent factor. As a final model, a multinomial logistic regression model was created where these exposures were entered simultaneously, and the model was adjusted for all factors. Similarly, three multinomial logistic regression models were used to detect associations between the number of psychotherapy sessions and RTW, when the reference category was no RTW. The first model was a univariate model, the second was adjusted for socioeconomic and sociodemographic factors and the third was also adjusted for vocational rehabilitation. The univariate and adjusted odds ratios (OR) and 95% confidence intervals (95% CIs) were computed. To test statistical significance a p -value < 0.05 was used. The collinearity of the exposures was assessed with the generalized variance inflation factor (GVIF) adjusted for each exposure based on the degrees of freedom. Since all exposures resulted in a GVIF below two, there was no indication of collinearity. Statistical analyses were conducted with SPSS Statistics Version 25 (IBM Inc., Armonk NY), R version 4.0.1, and package ggplot2 version 3.3.1. (Wickham, 2016)

Table I. Distribution of the received psychotherapy sessions from the beginning of the psychotherapy for the following calendar years. Disability pension recipients grouped based on the number of sessions received (%).

		Calendar years					
		1 (n = 103)	2 (n = 457)	3 (n = 556)	4 (n = 764)	5 (n = 65)	6 (n = 6)
Number of sessions	1–10	75.5	24.5	0	0	0	0
	11–60	12.3	63.0	21.1	3.6	0	0
	61–120	0.7	18.5	39.1	37.5	3.6	0.6
	> 120	0	2.6	25.2	66.4	5.5	0.3

Ethical Issues

The register data collected regularly for administrative, development and evaluation purposes were used for the study. No one will be identifiable from the data. The Ethics Committee of the National Institute of Health and Welfare has approved the plan of the project.

Results

Descriptive Analysis

The mean age of the DP recipients was 47.2 years (SD 11.9) and gender representation was 37.9% males. Out of 12,263 people in the data, who retired due to CMDs, 1,951 (15.9%) received rehabilitative psychotherapy from five years prior to three years after the DP grant. The number of psychotherapy sessions varied between one and 255. The mean number of psychotherapy sessions was 103.8 and the median was 101.0. Of the psychotherapy recipients 53 (2.7%) attended between one and ten psychotherapy sessions and were classified as early treatment terminators, 470 (24.1%) attended 11–60 sessions, 698 (35.8%) attended 61–120 sessions and 730 (37.4%) attended over 120 sessions. **Table I** shows the duration of psychotherapy in each psychotherapy session category. A larger amount of sessions naturally lasted for several years, whereas with fewer sessions, the duration of psychotherapy was commonly shorter. Psychotherapy visits were recorded yearly. For example, if an individual started a three-year psychotherapy in October 2012 and ended the sessions thus in September 2015, the sessions were divided into four calendar years (n = 764). For a small portion of individuals with 61–120 or over 120 sessions the reimbursed rehabilitative psychotherapy continued on for a fifth or a sixth calendar year, which could be due to client or therapist-related reasons with exceptional reimbursement period, or two separate reimbursed psychotherapy periods, (with a quarantine of five years between the reimbursed psychotherapy

periods) during the study interval, or issues related to data-recording. **Table II** shows the percentages of socioeconomic and sociodemographic factors and attending vocational rehabilitation in different psychotherapy session categories. Some data on occupation (n = 9,812) and income (n = 12,076) were missing and hence were left out of the regression analysis. Accordingly, the final sample sizes of the adjusted regression models are presented in **Tables III** and **IV**.

Association of Socioeconomic and Sociodemographic Factors with Psychotherapy Duration

Table III and **Figure 2** show an adjusted model of the associations between socioeconomic and sociodemographic factors and the number of psychotherapy sessions attended when the reference group was “no psychotherapy”. The univariate models are added as Supplementary Table 1.

Of sociodemographic factors, male gender was negatively associated with longer psychotherapies: adjusted ORs (aORs) were 0.61 (95% CI 0.48–0.77) for 11–60 sessions, 0.56 (95% CI 0.45–0.68) for 61–120 sessions, and 0.43 (95% CI 0.35–0.54) for over 120 sessions. Younger age was strongly associated with longer psychotherapies. In the group attending over 120 psychotherapy sessions, the aOR for the youngest age group was 31.81 (95% CI 20.82–48.60) while the reference was the oldest age group. These results mean that females and younger CMD patients tend to attend longer psychotherapies.

Of socioeconomic factors, higher education was associated with longer psychotherapies. AORs for the higher degree education were in the groups of 11–60 sessions, 61–120 sessions and over 120 sessions 4.17 (95% CI 2.61–6.68), 5.96 (95% CI 3.95–8.98) and 10.32 (95% CI 6.79–15.71) respectively, when the reference category was basic education. This means that more highly educated individuals tend to receive longer psychotherapies. High income was associated with attending psychotherapy for more than ten sessions, but the

Table II. Socioeconomic and sociodemographic factors, vocational rehabilitation and numbers of rehabilitative psychotherapy sessions attended.

	1–10 sessions (%)	11–60 sessions (%)	61–120 sessions (%)	over 120 sessions (%)	No psychotherapy (%)	Total
Total	0.4% (n = 53)	3.8% (n = 470)	5.7% (n = 698)	6.0% (n = 730)	84.1% n = 10,312	100% (n = 12,263)
Gender						
Male	43.4	25.3	24.1	20.5	40.6	37.9
Female	56.6	74.7	75.9	79.5	59.4	62.1
Age						
18–25 years	9.4	11.5	13.0	18.6	6.5	7.8
26–35 years	24.5	16.4	21.6	24.9	9.8	11.7
36–45 years	24.5	20.6	21.2	20.1	16.1	16.8
46–55 years	22.6	31.7	29.9	28.2	32.7	32.2
56–65 years	18.9	19.8	14.2	8.1	35.0	31.5
Family status						
Living alone	41.5	28.3	29.8	35.1	37.6	36.7
Couple	24.5	32.6	28.5	24.7	31.7	31.1
Single parent	13.2	12.8	10.9	12.1	9.8	10.1
Couple with children	20.8	26.4	30.8	28.2	20.9	22.1
Education						
Higher degree tertiary	11.3	12.1	12.8	14.1	5.2	6.0
Lower degree tertiary	9.4	10.6	13.3	13.2	5.6	6.4
Short cycle tertiary	20.8	21.5	19.9	15.6	13.5	14.3
Upper secondary level	34.0	40.4	41.4	43.8	47.4	46.6
Basic level	24.5	15.3	12.6	13.3	28.3	26.8
Income ^a						
Highest	17.3	20.1	17.1	20.2	12.5	13.5
Middle-higher	21.2	19.2	21.6	16.5	14.4	15.2
Middle	15.4	20.5	19.1	18.5	19.0	19.0
Middle-lower	25.0	22.2	22.8	18.7	23.2	22.8
Lowest	21.2	17.9	19.4	26.1	30.9	29.4
Occupation ^b						
Entrepreneur	8.5	5.9	4.1	7.3	8.2	7.8
Upper white-collar worker	14.9	21.2	22.3	21.1	11.9	13.5
Lower white-collar worker	42.6	40.9	40.6	34.2	33.1	34.1
Student	10.6	13.2	16.3	21.9	8.3	9.9
Unemployed	6.4	4.9	5.5	4.6	13.7	12.1
Manual worker	17.0	13.9	11.2	10.9	24.9	22.6
Vocational rehabilitation						
Yes	52.8	54.5	57.9	55.6	40.4	42.9
No	47.2	45.5	42.1	44.4	59.6	57.1

^aTotal n = 12,076

^bTotal n = 9,812

strength of the association did not increase towards longer psychotherapies. Regarding occupational status, entrepreneurs, white-collar workers and students were all associated with adherence to psychotherapy for more than ten sessions while the reference group was manual workers. None of the socioeconomic factors was statistically significantly associated with early treatment terminations when the reference group was “no psychotherapy”. Early treatment termination category had overall relatively wide confidence intervals, which reflect the relatively small group sizes and statistical uncertainty.

Association between a Number of Psychotherapy Sessions and RTW among tDP Recipients

Out of 12,263 people in the data, who retired due to CMDs, 4408 (35.9%) received temporary and 7855 (64.1%) permanent DP. Of those who received tDP 1292 people (29.3%) were able to return to work, 631 people (14.3%) did return for a few days (partial RTW) and 2485 (56.4%) did not return to work at all. Supplementary Table 2 shows the frequencies and percentages of socioeconomic and

Table III. Association of socioeconomic and sociodemographic factors with the number of psychotherapy sessions attended, adjusted multinomial logistic regression model (reference = no psychotherapy).

	1–10 sessions		11–60 sessions		61–120 sessions		over 120 sessions	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Gender								
Male	1.70	0.92 - 3.12	0.61*	0.48 - 0.77	0.56*	0.45 - 0.68	0.43*	0.35 - 0.54
Female (reference)	1		1		1		1	
Age								
18–25 years	3.63	0.80 - 16.58	6.95*	4.34 - 11.13	12.82*	8.62 - 19.06	31.81*	20.82 - 48.60
26–35 years	8.42*	3.22 - 22.03	5.08*	3.49 - 7.40	8.67*	6.27 - 11.98	18.73*	12.99 - 26.99
36–45 years	3.66*	1.43 - 9.36	3.12*	2.22 - 4.37	4.00*	2.95 - 5.43	7.54*	5.31 - 10.72
46–55 years	1.45	0.60 - 3.50	2.10*	1.58 - 2.79	2.81*	2.16 - 3.65	4.71*	3.43 - 6.46
56–65 years (reference)	1		1		1		1	
Family status								
Living alone	2.11	0.94 - 4.71	0.99	0.75 - 1.32	0.85	0.67 - 1.07	0.99	0.78 - 1.25
Couple	1.22	0.50 - 2.99	1.04	0.79 - 1.37	0.88	0.70 - 1.11	0.81	0.64 - 1.03
Single parent	2.01	0.71 - 5.66	1.23	0.86 - 1.74	0.89	0.65 - 1.21	1.06	0.78 - 1.44
Couple with children (reference)	1		1		1		1	
Education								
Higher degree tertiary	2.93	0.80 - 10.72	4.17*	2.61 - 6.68	5.96*	3.95 - 8.98	10.32*	6.79 - 15.71
Lower degree tertiary	1.65	0.51 - 5.30	2.66*	1.71 - 4.12	3.94*	2.71 - 5.73	5.63*	3.80 - 8.34
Short cycle tertiary	2.28	0.86 - 6.07	2.82*	1.93 - 4.11	3.44*	2.44 - 4.85	4.90*	3.38 - 7.11
Upper secondary level	0.78	0.34 - 1.78	1.53*	1.11 - 2.10	1.98*	1.49 - 2.64	2.72*	2.02 - 3.67
Basic level (reference)	1		1		1		1	
Income								
Highest	2.64	0.77 - 9.03	2.35*	1.53 - 3.62	1.79*	1.25 - 2.58	2.40*	1.72 - 3.35
Middle-higher	2.55	0.82 - 7.91	2.01*	1.34 - 3.01	1.97*	1.42 - 2.73	1.56*	1.14 - 2.15
Middle	1.25	0.39 - 3.96	1.57*	1.07 - 1.31	1.25	0.91 - 1.71	1.10	0.82 - 1.49
Middle-lower	1.84	0.65 - 5.17	1.55*	1.07 - 2.24	1.29	0.96 - 1.74	0.85	0.63 - 1.13
Lowest (reference)	1		1		1		1	
Occupation								
Entrepreneur	1.55	0.45 - 5.32	1.26	0.75 - 1.32	1.16	0.72 - 1.85	1.93*	1.29 - 2.90
Upper white-collar worker	1.14	0.34 - 3.83	1.75*	1.17 - 2.63	2.36*	1.66 - 3.37	1.87*	1.29 - 2.69
Lower white-collar worker	1.77	0.73 - 4.28	1.60*	1.16 - 2.20	2.02*	1.51 - 2.70	1.59*	1.18 - 2.15
Student	1.18	0.34 - 4.09	1.71*	1.12 - 2.63	2.15*	1.50 - 3.08	2.22*	1.57 - 3.13
Unemployed	0.72	0.18 - 2.86	0.77	0.46 - 1.29	1.03	0.67 - 1.59	0.81	0.51 - 1.29
Manual worker (reference)	1		1		1		1	
Vocational rehabilitation								
Yes	1.53	0.85 - 2.77	1.38*	1.13 - 1.70	1.50*	1.26 - 1.79	1.44*	1.21 - 1.72
No (reference)	1		1		1		1	

Total n = 9,720 in the adjusted multinomial logistic regression model

*Statistical significance $p < 0.05$

sociodemographic factors, attending vocational rehabilitation and the number of psychotherapy sessions attended in different RTW status categories.

The association between number of psychotherapy sessions attended and RTW is examined with three models in Table IV. Model 1 is a univariate model according to which all psychotherapy use of more than ten sessions was associated with full RTW: OR for 11–60 sessions was 2.07 (95% CI 1.54–2.78), for 61–120 sessions 1.59 (95% CI 1.26–2.02) and for over 120 sessions 1.41 (95% CI 1.13–1.75). Model 2 is adjusted for socioeconomic and sociodemographic factors and only psychotherapy of 11–60 sessions was significantly associated with full RTW with OR 1.66 (95% CI 1.15–2.39), meaning that people who attended 11–60 psychotherapy sessions were more

likely to return to work than those who didn't attend psychotherapy. The results remained the same in model 3, which is also adjusted for vocational rehabilitation.

In the analyses with partial RTW, psychotherapy groups with 1–10 and 11–60 sessions were significantly associated with partial RTW in all three models (Table IV). Early treatment termination had remarkably higher ORs 6.09 (95% CI 2.16–17.15) in model 2 and 5.94 (95% CI 2.11–16.75) in model 3, whereas psychotherapy sessions 11–60 had ORs 1.69 (1.11–2.58) and 1.67 (1.09–2.55) respectively. This means that those people who dropped out of psychotherapy and to some extent also those who attended 11–60 sessions tended to return to work more than those not attending

Table IV. Association between a number of psychotherapy sessions and RTW, multinomial logistic regression models (reference = no RTW).

	Full RTW						Partial RTW					
	Model 1		Model 2		Model 3		Model 1		Model 2		Model 3	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Over 120 sessions	1.41*	1.13 - 1.75	1.22	0.92 - 1.62	1.19	0.90 - 1.58	1.35*	1.01 - 1.80	1.26	0.91 - 1.75	1.23	0.89 - 1.71
61–120 sessions	1.59*	1.26 - 2.02	1.20	0.90 - 1.61	1.18	0.88 - 1.58	1.31	0.95 - 1.80	0.91	0.62 - 1.32	0.89	0.61 - 1.30
11–60 sessions	2.07*	1.54 - 2.78	1.66*	1.15 - 2.39	1.64*	1.14 - 2.36	1.86*	1.27 - 2.72	1.69*	1.11 - 2.58	1.67*	1.09 - 2.55
1–10 sessions	1.08	0.37 - 3.17	1.18	0.33 - 4.28	1.16	0.32 - 4.19	5.22*	2.24 - 12.16	6.09*	2.16 - 17.15	5.94*	2.11 - 16.75
No	1		1		1		1		1		1	

Model 1: Univariate model, total n = 4,408

Model 2: Adjusted for socioeconomic and sociodemographic factors, total n = 3,435

Model 3: Adjusted for socioeconomic and sociodemographic factors and vocational rehabilitation, total n = 3,435

*Statistical significance $p < 0.05$

psychotherapy, but could not permanently maintain their working ability.

Discussion

This study with 12,263 disability pension (DP) recipients due to common mental disorders (CMDs) showed a significant association between socioeconomic and sociodemographic factors and the number of psychotherapy sessions attended. To the best of our knowledge, this is the first study to report tendency among younger and more highly-educated individuals to attend psychotherapy more perseveringly. Moreover, we found a positive association between attending 11–60 psychotherapy sessions and return to work (RTW) among the 4,408 CMD patients in temporary DP (tDP).

Socioeconomic and Sociodemographic Factors, Vocational Rehabilitation, and Psychotherapy Duration

Higher education and younger age were strongly associated with attending more psychotherapy sessions, and the gradients became steeper towards the longest therapy group. Of socioeconomic factors, higher income, higher occupational status and being a student were likewise positively associated with adhering to psychotherapy for more than ten sessions. According to the literature, high SES may relate positively to a therapeutic alliance, which means emotionally bonding with a therapist, with common goals and methods (Wolgast et al., 2022). The therapeutic alliance tends to lead to better adherence, which is beneficial for the outcome of psychotherapy (Huddy et al., 2012; Wolgast et al., 2022). Clients with low socioeconomic status (SES) may feel remote from the psychotherapy process and find it difficult to identify

with their therapist (Wolgast et al., 2022), which may lead to earlier psychotherapy cessations and hence also explain our results.

Research has been inconclusive about an association between SES and psychotherapy dropout (Firth et al., 2022; Reis & Brown, 1999; Swift & Greenberg, 2012), nor could this association be studied in the present study setting. However, we can conclude that CMD patients with higher education tend to persevere longer with psychotherapies and higher income and occupational status are associated with adhering to psychotherapy for more than ten sessions. In the literature, access to a psychotherapist has been shown to be more difficult for lower SES clients due to invisible discrimination (Kugelmass, 2016). Besides, after starting psychotherapy, low SES clients may experience a sense of inferiority and shame and may see their social situation as an obstacle to effective psychotherapy (Trott & Reeves, 2018; Wolgast et al., 2022). Furthermore, in Finland, the out-of-pocket cost for each psychotherapy session is 30–70 euros after the reimbursement by the SII, which may be a further obstacle to longer psychotherapies among low-income clients. All the above-mentioned reasons may lead to earlier cessation of psychotherapy among low SES clients.

Of sociodemographic factors, besides older age, male gender was also negatively associated with psychotherapy adherence for more than ten sessions, and the negative gradient was steeper towards longer therapies. According to the literature, males attend less psychotherapy, and showing emotional vulnerability may contradict perceptions of masculine traits, and adhering to traditional male role norms increases the threshold to seek psychotherapy (Eggenberger et al., 2021). Encouraging males to attend psychotherapy has been proposed in various ways (Seidler et al., 2018). Forming a therapeutic alliance has been seen as a key factor to combat

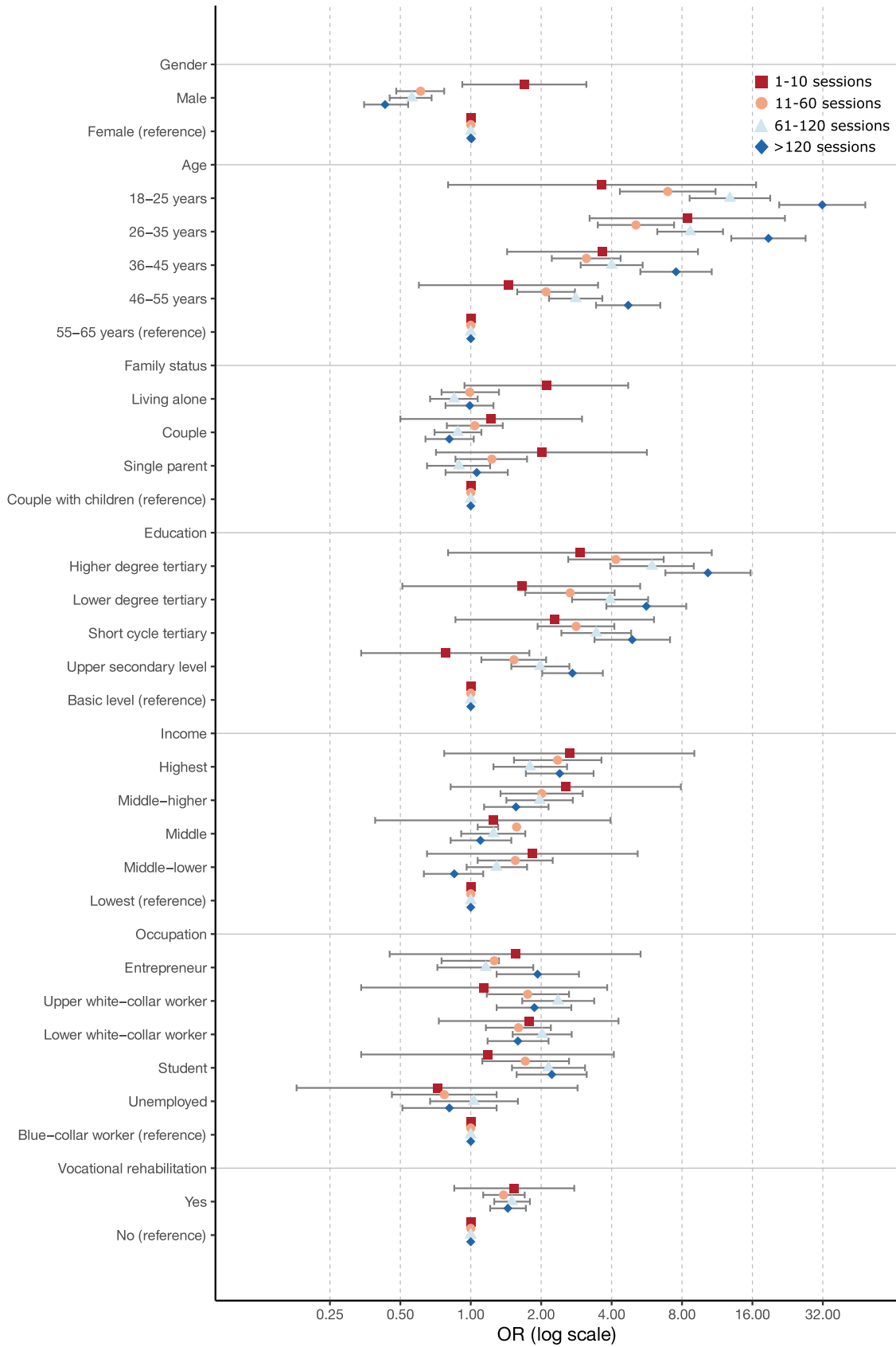


Figure 2. Socioeconomic and sociodemographic factors associated with the number of psychotherapy sessions attended (reference = no psychotherapy).

feelings of uncertainty, stigma and ambivalence towards treatment (Seidler et al., 2018). This could help males to adhere to longer therapies if needed.

Vocational rehabilitation was associated with adherence to psychotherapy for more than ten sessions, possibly reflecting the availability of rehabilitation measures in general and the patients' readiness to use them.

Psychotherapy Duration and RTW

Rehabilitative psychotherapy is aimed at restoring working ability (Tuulio-Henriksson et al., 2019), and in our study, the overall association of psychotherapy with RTW from tDP was quite moderate, which is in line with the literature, with weak or uncertain evidence of improved working ability (Finnes et al., 2019; Nieuwenhuijsen et al., 2020; Salomonsson et al., 2018). Our study included a specific population of CMD patients in such a dire condition that they ended up on DP. Therefore, they presumably needed longer psychotherapies in general than CMD patients with less severe psychopathology would need (Nordmo et al., 2021; Robinson et al., 2020). Noteworthy, the association of 11–60 psychotherapy sessions with full RTW remained significant in all models, even after adjusting for socioeconomic factors and vocational rehabilitation, indicating that the psychotherapy process itself may be essential in regaining working ability. The Norwegian study (Nordmo et al., 2021) of open-ended psychotherapies also showed that the median time to functionally significant change in symptom reduction was 57 sessions. Due to our study setting, we can draw no causal conclusions about the optimal duration of psychotherapy in promoting RTW. Probably those who regained full working ability were suitable for psychotherapy (Laaksonen et al., 2012) and relatively fast psychotherapy responders (Nordmo et al., 2021; Robinson et al., 2020), and psychotherapy, possibly among other interventions, was correctly timed for them. Probably those who are more likely to regain working ability and assume it as a part of their social rehabilitation, often do so in the relatively early phases of the psychotherapy process.

Psychotherapies of Maximal Length and RTW

We found no evidence to suggest that psychotherapies of maximal lengths are superior in achieving full or partial RTW. In predicting the outcome of psychotherapies, two models on the trajectories of change over time prevail, the dose-effect (DE) model and the good enough level (GEL) model

(Nordmo et al., 2021; Robinson et al., 2020; Schuler et al., 2021). The DE model assumes a negatively accelerating (curvilinear) dose-outcome relationship and predicts diminishing improvements over time. The GEL model assumes that each client attends psychotherapy for as long as is required to achieve a good enough level of functioning. In long therapies, the recent literature has reported inconsistent results on whether the dose-outcome relationship is linear or curvilinear (Nordmo et al., 2021; Schuler et al., 2021; Sembill et al., 2017). Our result can be explained by the GEL model's assumption whereby psychotherapy duration reflects the therapeutic responsiveness of the client; others respond quickly whereas some need longer therapies (Nordmo et al., 2021; Robinson et al., 2020). Probably some patients in open-ended psychotherapy never reach the theoretical "Good Enough Level". On the other hand, our endpoint was straightforwardly related to working ability measured by RTW. We did not study different domains, such as well-being, symptoms or interpersonal functioning, which may change in different slopes over the psychotherapy process (Nordmo et al., 2021; Sembill et al., 2017). One possibility is that CMD patients with longer psychotherapies (over 60 sessions) had reduced symptoms and improved well-being, even though they could not return to work, which may have motivated them to continue psychotherapy.

In contrast to the present study, Knekt et al studied CMD patients who were not facing DPs. One of their studies (Knekt et al., 2008) compared short-term therapies combined with auxiliary therapies (30–47 sessions) and long-term therapy (about 235 sessions) with three-year follow-up. Another study (Knekt et al., 2016) compared short-term therapies combined with auxiliary therapies (100–120 sessions), and long-term therapy (240–260 sessions) with 10-year follow-up. In both studies, working ability scores improved more in long therapies at the end of follow-up but no differences emerged in employment status. The superiority of long-term psychotherapies in restoring working ability was hence detected in questionnaires but not yet in work statistics. In the present study, one interpretation is that slow responders responded too slowly to return to work in the cases when they were already close to being granted DP.

Socioeconomic Status, Psychotherapy Adherence and Working Ability

Early treatment termination was strongly associated with partial RTW in all models but not with full RTW, which may reflect inability to adhere to the

rehabilitation process and regain full working ability. Also, attending 11–60 psychotherapy sessions was associated with partial RTW, but less strongly. It might be that in this group, some slow responders discontinued psychotherapy prematurely in relation to their needs. We cannot be sure whether the clients who terminated their treatment early would have benefitted from psychotherapy after all. One way to measure this could be the Suitability for Psychotherapy Scale (SPS), which uses ego strength, self-observing capacity and nature of problems as suitability measures and has proven to be a valid method for assessing pre-treatment suitability, especially in long psychotherapies (Knekt et al., 2021; Laaksonen et al., 2012).

In our study higher SES was associated with attending more than ten psychotherapy sessions, hence predisposing to greater likelihood of full RTW. Sweetman et al. (2021) found that initial non-attendance to psychotherapy was associated with a lack of confidence in the service, a perceived mismatch between the service and patient perceptions and patient concerns about the consequences of engaging with mental health services (Sweetman et al., 2021). Recent research has already proposed many ways to improve adherence, like psychoeducation prior to treatment, prompt responses to the patient, flexibility and addressing financial constraints (Holman, 2014; Levi et al., 2018; Sweetman et al., 2021). Probably, before initiating the psychotherapy process, this extra effort should be made especially for low SES patients with good suitability for psychotherapy.

Strengths and Limitations

The strength of this study was a unique research setting with reliable register-based data, which enabled us to study long rehabilitative psychotherapies over a nine-year period. The data enabled us to include all SES groups in the study and to combine the information with sociodemographic, rehabilitation and RTW data. Instead of evaluating the effectiveness of psychotherapy, this study analysed psychotherapy targeting and adherence, and factors related to them.

Our study also had some limitations. First, the reasons for psychotherapy cessation were not recorded and dropout could not be detected. Second, we studied CMD patients ending up on DPs, and the results cannot be generalized to include all psychotherapy recipients. Third, antidepressant medication was used by the majority (96.4%) of the study subjects at least at some point during the nine-year interval, but medication was not under investigation. Fourth, due to technical

reasons, the follow-up was not more than three years after the DP grant. We consider this the most critical time period regarding RTW. Fifth, we did not study the exact timing of psychotherapy in relation to DP, but we know that in Finland psychotherapy is in practically all cases granted before the DP (Tuulio-Henriksson et al., 2019), and the follow-up of three years after the DP implies that all the study subjects should have received the benefits of rehabilitative psychotherapy in the possible RTW process. Sixth, in the RTW analysis of tDP recipients, the number of individuals in each psychotherapy session category was small, especially in the category 1–10 sessions (minimum $n=5$), which must be considered with caution when interpreting the results. The number of cell sizes is shown in Supplementary Table 2. Seventh, there was some missing data on income and occupation, which we included in our preliminary analyses as separate categories. However, as we couldn't make any certain conclusions about the missing data or consider them as systematic groups, we left them out, which didn't impact the main results.

Conclusion

We found evidence of socioeconomic and sociodemographic factors contributing to differences in adhering to psychotherapy. Moreover, avoiding early treatment termination may help regain working ability. System-based factors, which possibly target psychotherapy in a suboptimal way regarding the potential to return to work, merit further study.

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Supplemental Data

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