

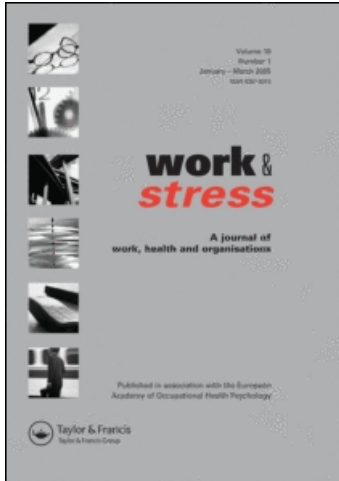
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Return to work among employees with mental health problems: Development and validation of a self-efficacy questionnaire

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Because of the costs to both the organization and the individual, it is important that employees who are sick-listed with mental health problems are facilitated in their return to work (RTW). In order to provide adequate interventions, it is necessary to obtain a better understanding of the RTW process of people with mental health problems. Work-related self-efficacy (SE) might play a key role within this process. This paper describes the development and validation of the return-to-work self-efficacy' scale (RTW-SE) for employees with mental health problems. Three Dutch samples of sick-listed employees were used to validate the 11-item instrument ($N = 2214$). Based on the factor structure and reliability results, RTW-SE was conceptualized as a unitary construct. The associations with general SE, locus of control, coping, physical workload and mental health problems support the construct validity of this scale. Most importantly, RTW-SE proved to be a robust predictor of actual return to work within three months. The encouraging preliminary psychometric properties of the scale make it a potentially valuable tool in research and in clinical practice and occupational health care settings, both before and after employees have returned to work.

Keywords: instrument validation; self-efficacy; return to work; mental health; occupational health; work disability; work-related stress

Introduction

Mental health problems are associated with reduced participation in work, such as sick leave or long-lasting work disability (Hardy, Woods, & Wall, 2003; Wang, Adair, & Patten, 2006). Because of the societal costs and individual suffering associated with reduced work participation, it is important that employees with mental health problems are facilitated in their return to work (RTW) (Eaton et al., 2008; Goetzel et al., 2004). Therefore, a better understanding of the factors that facilitate or hamper the RTW process is needed. As most research and theorizing with respect to RTW has focused on people with physical disabilities, special attention should be paid to the return to work process of employees with mental health disorders (Briand, Duran, St-Arnaud, & Corbière, 2007; Sanderson, Nicholson, Graves, Tilse, & Oldenburg, 2008).

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Self-efficacy (SE) is a construct that would appear useful in understanding and facilitating RTW behaviour. In short, SE is the belief that an individual has in his/her capacity to perform a specific behaviour successfully (Bandura, 1977; 1986). According to Bandura, SE is highly predictive of the initiation and persistent execution of behaviour. High self-efficacious individuals set themselves more challenging goals, invest more to pursue these goals, persist longer and are better in dealing with setbacks than persons low in SE. Moreover, individuals will avoid activities for which they experience low SE. When applied to RTW, people with low SE believe that they will fail to fulfil their work demands or work role. These efficacy cognitions are expected to be prominently present among those with mental health problems, as mental disorders often erode a positive self-concept by the very nature of the disorder (Corrigan, Watson, & Barr, 2006). Based on SE theory it can be expected that these employees will postpone their return to work and be less successful in their attempts to return to work than employees with higher levels of SE.

The concept of SE has proved its predictive value for a range of work-related behaviours, such as RTW for employees with physical disabilities (Mondloch, Cole, & Frank, 2001; Reiso et al., 2003) and work resumption of unemployed individuals with mental health problems (Renegold, Sherman, & Fenzel, 1999). In addition, some empirical findings suggest the importance of SE in the RTW process for employees on sick leave with mental health problems. Nieuwenhuijsen, Verbeek, de Boer, Blonk, and van Dijk (2006) showed, for example, that patient expectations of recovery duration are a robust predictor of the actual time taken to RTW for employees with common mental health problems. These expectations about the duration of the RTW process might be indicative for underlying efficacy cognitions.

To our knowledge, however, no measures are available that capture SE expectations regarding RTW and return-to-work self-efficacy (RTW-SE) for sick-listed employees with mental health problems. This paper describes the development and preliminary validation of a new RTW-SE questionnaire. Concerning the development it is important that this measure covers the domain of RTW cognitions that are relevant for people with mental health problems. An instrument that addresses these disability-specific considerations may be of great use in research as well as for screening or the evaluation of the effects of treatment within a clinical setting.

Development of the questionnaire

In the development of our questionnaire, we aimed to incorporate disability-specific components of RTW for employees with common mental disorders. For that purpose, several stakeholders were interviewed (e.g. clinical psychologists, work and organizational psychologists, occupational physicians and workers with mental health problems). The stakeholders were informed that the questionnaire had to be useful for evaluative purposes and to provide useful information to care providers in order to offer tailored interventions. RTW was defined as “performing at a level adequate to meet the regular demands of a work setting.” Multiple aspects of the RTW process were discussed with the stakeholders, such as factors influencing the decision to RTW and work functioning problems, specifically for employees with common mental health problems. Several domains of work functioning problems could be distinguished from these interviews: (1) difficulty in concentrating, (2) dealing with work pressure (e.g. setting one’s personal boundaries), and (3) problems with emotion or

(4) energy regulation. We combined these qualitative outcomes with the scientific literature on mental health in relation to work outcomes. In addition, we reviewed existing (general or specific) SE scales (for example, Barlow, Wright, & Cullen, 2002; Schwarzer & Jerusalem, 1995). This resulted in an initial pool of 33 items. We chose items describing general job requirements in order to keep the questionnaire applicable across occupations. The group of stakeholders reviewed the scale before it was finalized into its 11-item version. Criteria that were used to shorten the scale were: usefulness to care providers (offering interventions and monitoring results), comprehensibility, lack of ambiguity, no overlap with other items, covering the aspects of SE as proposed by Bandura, and preserving at least one item per work functioning domain mentioned in the stakeholder interviews. In order to examine the construct validity of the new RTW-SE scale its relationship with several other relevant constructs will be explored in this paper. These are outlined in the following four sections.

General self-efficacy and locus of control

General SE (GSE) and locus of control are both part of the so-called “core self-evaluations.” Because these two core self-evaluations have proved to be related to various work outcomes (e.g. job performance), they seem relevant constructs to consider when evaluating a measure for RTW-SE (Judge, Erez, Bono, & Thoresen, 2003). GSE refers to a broad and stable sense about how well one can perform across a variety of situations. GSE can be viewed as an underlying trait-like construct that overlaps to a certain extent with specific SE measures that are more state dependent. Luszczynska, Scholz, and Schwarzer (2005) found in their meta-analysis, for example, that GSE beliefs were moderately (correlations of about .20 to .30) but consistently positively related to behaviour-specific SE beliefs. Barlow et al. (2002) found even higher correlations between GSE and a job seeking SE scale ($r = .72$). Therefore, we expect that:

Hypothesis 1. Higher RTW SE will be moderately to strongly associated with higher levels of GSE.

Internal locus of control refers to the belief that events in one’s life are caused by one’s own behaviour and that one is in control of what happens in one’s life. People with an external locus, on the contrary, believe that outcomes are unrelated to their own actions and are influenced by external forces beyond their control (such as fate or others). An internal locus of control has been related to positive vocational outcomes, such as reemployment (Ginexi, Howe, & Caplan, 2000). Bandura suggests that achievements will only enhance SE if individuals attribute these to personal ability. Thus, an internal locus of control seems to be a prerequisite for higher levels of SE. The interrelatedness between SE and locus of control is, for example, demonstrated among unemployed participants with clinically diagnosed mental health disorders (Strauser, Ketz, & Keim, 2002). Strauser et al. found that higher internal locus of control (as opposed to an external locus) was associated with higher job readiness SE ($r = .37$). Thus we expect that:

Hypothesis 2: Internal locus of control will be clearly distinct from but still moderately related to higher RTW-SE.

Mental health status

Mental health problems such as stress, anxiety or depression are associated with lower SE (Bandura, 1997; Schwarzer, 1992). The relationship between SE and mental health has been supported in occupational settings (Jex & Gudanowski, 1992; Mueller, Hartmann, Mueller, & Eich, 2003; Waghorn, Chant, & King, 2005). Therefore, we expect that:

Hypothesis 3: RTW-SE will be strongly negatively related to mental health problems.

As low SE might even be an indication of having a mental disorder (Tonge et al., 2005), it is particularly important that our empirical findings support the notion that RTW-SE for people with mental health problems is, despite a relatively high correlation, not equivalent to their mental health problems. Because the instrument specifically captures RTW problems for people with psychological problems, we additionally expect that:

Hypothesis 4: People with a mental health disorder will score lower on the SE-RTW scale than those with physical health problems.

Coping style

Coping strategies are defined as ongoing cognitive and behavioural efforts to manage specific external and/or internal demands appraised as taxing or exceeding the resources of a person (Lazarus, 1999). Several coping styles have been identified. Active coping refers to active strategies people adopt to solve a stressful situation and is generally considered to be an “effective coping style,” whereas avoidant coping is generally viewed as less effective (Penley, Tomaka, & Wiebe, 2002). People who adopt an avoidant coping strategy aim to reduce the negative effects (and emotions) of a stressful situation by avoiding that situation. Individuals with high levels of SE are found to use different and more effective coping strategies as they recognize that they are able to overcome the obstacles, and will focus on opportunities (Lazarus & Folkman, 1984). For example, when sick-listed workers hold the belief that they are able to deal with their work demands (high RTW-SE), they are more likely to show active coping strategies than avoidant coping styles. Thus we expect that:

*Hypothesis 5a: RTW-SE will be negatively correlated with avoidant coping and
Hypothesis 5b: RTW-SE will be positively correlated with active coping.*

Physical workload

Physical workload refers to the physical demands of work activity such as general physical exertion, but also handling physical loads and working in physically uncomfortable body positions. Demands at the physical level are expected to have little effect on the SE concerning tasks that are most likely to be disrupted by mental health problems, such as meeting cognitive or emotional job demands. Even within a population of absentees with musculoskeletal disorders Lötters, Franche, Hogg-Johnson, Burdorf, and Pole (2006) failed to find a correlation between RTW-SE and perceived physical workload. As our questionnaire was designed to

measure work functioning expectations associated with the symptoms of mental health disorders, we expect that:

Hypothesis 6: RTW-SE will be unrelated to perceived physical workload.

Predictive validity

Studying the associations with the aforementioned constructs is an essential step within the validation process. In addition, a remaining key question is whether RTW-SE is predictive of actual RTW. Because gradual work resumption seems to be an important element in successful RTW for employees with mental health problems (van der Klink, 2002), attention will be paid to both full RTW (working full contract hours) and partial RTW (temporarily working fewer hours than defined by contract). Based on theoretical and empirical findings, as described before, we expect that:

Hypothesis 7: Baseline RTW-SE will be associated with partial RTW at baseline and predictive of either full or partial RTW within a period of three months.

Method

Participants and procedure

Data were obtained concerning 2214 sick-listed employees from three Dutch samples, of whom about half had resumed their work tasks partially at baseline measurement, as opposed to those who were fully sick-listed at baseline. One sample consisted of employees who were selected because of their psychological complaints. The other two were mixed samples (employees selected because of health problems, either mental or physical). Employees from all three samples could experience co-morbid physical or mental health complaints. The demographics and absence-related information of the participants are presented in Table 1. Additional information is provided below.

Sample 1. The first sample consisted of a representative sample of 1934 Dutch employees who were sick-listed for more than 13 weeks; they were recruited via the national Dutch Social Security Agency in 2007. The survey was sent to a large sample ($N=10,118$) of the Agency, and only those clients meeting the inclusion criteria (partial of full sick leave) were asked to respond. Participants were on average 46 years and female in 54% of the cases. The majority of this sample (67%) experienced serious psychological problems-based cut-off scores on the Maslach Burnout Inventory (>2.20 indicating clinical burnout; Schaufeli & van Dierendonck, 2001) or the shortened Center for Epidemiologic Studies Depression Scale, CES-D (≥ 10 indicating depression; Andresen, Malmgren, Carter, & Patrick, 1994). Of the participants who indicated physical problems as the main reason for their absence, 60% reported limb or back problems, 14% physical disability due to an accident, 10% heart disease and 8% cancer. Participants worked on average 32 hours per week as defined by their contract.

Sample 2. The second sample consisted of three waves of a longitudinal study among 189 employees (response rate 36%) who were on sick leave due to common mental health disorders (as diagnosed according to DSM-IV criteria by a clinical psychologist) and were going to receive psychotherapy shortly after baseline measurement. The participants were recruited via their psychotherapists in 2007. Data were gathered before the onset of therapy, and three months ($N=180$) and six months ($N=175$) after baseline. Participants were on average 41 years old, and 57% of them were female. Of the

Table 1. Participant characteristics across the three samples.

	Sample 1 N = 1934	Sample 2 N = 189	Sample 3 N = 91	Total N = 2214
Mean age (<i>SD</i>)	46.0 (9.9)	40.6 (9.5)	44.1(10.2)	45.4 (10.1)
Gender (% female)	54.2	56.8	47.3	54.1
Higher education (% college or university)	26.3	44.7	NA	27.9
Weeks on sick leave at baseline (<i>SD</i>)	19.3 (3.2)	9.4 (11.2)	20.4 (21.6)	18.4 (6.9)
Fully sick listed at baseline (%)	45	61	46	46
Mental health disorder at baseline* (%)	67	100	48	69
Self reported reason for absence (%)				
Physical health problems	39.7	16.8	36.3	39.1
Mental health problems	16.8	33.7	27.5	17.2
Mental and physical health problems	21.9	45.3	NA#	22.9
Other/missing	21.6	4.2	36.3	20.8

Note: *Based on Center for Epidemiologic Studies Depression Scale/Maslach Burnout Inventory cut-off scores (sample 1); clinical mental health diagnosis (sample 2); cut-off scores of the depression subscale of the Depression, Anxiety & Stress scale (sample 3).

#In this sample the participants were required to choose a main reason for absence (co-morbidity was not an option).

participants who indicated physical problems as the main reason for their absence, 87% reported fatigue, 77% problems of the limbs or back and 21% headaches. It was a mixed sample regarding type of job and company size and participants worked on average 33 hours per week as defined by their contract.

Sample 3. The third sample consisted of 91 participants who were recruited via an Occupational Health Organization in 2005 (response rate 21%). All participants were on sick leave and had contact with their occupational physician during the inclusion period (three weeks). Of the total sample, 65 participants also filled in a two-week follow-up questionnaire and 73 (80%) gave permission to extract RTW levels from the files of the Occupational Health Organization after three months. Participants were on average 44 years old, and 47% were female. Almost half of the sample (48%) had a score of 6 or higher on the shortened depression subscale (Depression Anxiety Stress Scales (DASS)) and were considered to be experiencing serious psychological problems (Nieuwenhuijsen, de Boer, Verbeek, Blonk, & van Dijk, 2003). Regular working hours were on average 33 hours per week within this sample.

Instruments

Return to work and sick leave

Both the onset of sick leave and RTW were reported by the participants in the questionnaire and were compared to data from the registration systems of the Social Security Agency (sample 1), the psychologist (sample 2) or the Occupational Health Organization (sample 3). An exception was that the RTW follow-up data in the third sample were collected from the files of the Occupational Health Organization only. The onset of sick leave was defined as the start date of the most recent absence period. RTW was defined as the current work status compared to regular working hours as defined by contract: that is, no RTW, partial RTW (temporarily working fewer than full contract hours) or full RTW.

RTW-SE

RTW-SE was measured with an 11-item scale as described earlier. Participants were asked to respond to statements about their jobs, imagining that they would start working their full contract hours again tomorrow (in their present emotional state/state of mind). An example item is: "If I resumed my work fully tomorrow I expect that: I will be able to perform my tasks at work." Response categories vary from 'totally disagree' to 'totally agree' on a six-point scale. A mean score over the 11 items was used to compute the RTW-SE scale score.

Depression

The self-report 10-item Centre for Epidemiologic Studies Depression scale (shortened CES-D, Andresen et al., 1994) was used for the measurement of depression. The original 20 item CES-D scale (Radloff, 1977) is designed to measure depressive symptoms in the general population. The CES-D requires the respondent to describe how frequently he or she has felt or experienced each of the statements during the previous week. Responses include: 0 "Rarely or none of the time (less than 1 day);" 1 "Some or a little of the time (1–2 days);" 2 "Occasionally or a moderate amount of the time (3–4 days);" and 3 "Most or all of the time (5–7 days)." An example item is: "I was bothered by things that usually don't bother me." The CES-D total score adds the scores over all items (range for the shortened scale is 0–30). Sum scores of 10 or higher indicate clinically significant levels of depressive symptoms. Internal consistency (Cronbach's alpha) in our study was .85.

General Self-Efficacy (GSE)

GSE refers to the belief in one's competence to cope with a broad range of stressful or challenging demands. It was measured with a 10-item scale by Schwarzer and Jerusalem (1995). A typical item is, "Thanks to my resourcefulness, I can handle unforeseen situations." Possible responses are not at all true (1), hardly true (2), moderately true (3) and exactly true (4). The summed scale score had excellent internal consistency (Cronbach's $\alpha = .91$).

Locus of control

Internal locus of control was measured with five items from Rotter's locus of control scale (Rotter, 1966). This self-report measure is designed to measure the respondents' perceived ability to influence events in their own life. These five items were selected in accordance with the recommendations by Den Hertog (1992) who suggested a separate shortened internal locus subscale. Higher scores on this scale indicate a more internal orientation. Participants are asked to indicate how strongly they agree with statements on a six-point scale (coded 1 to 6). An example item is: "Things that happen are determined by my own actions." A mean scale score was computed with an internal consistency of .59. Adaptations to the scale did not substantially improve the internal consistency of this scale.

Coping

Coping was measured with the shortened version of the Utrecht Coping List (UCL; Schreurs, van de Willige, Brosschot, Tellegen, & Graus, 1993). This questionnaire was designed to measure the coping strategies people use in stressful situations and is regarded as a personal disposition (trait). For the purpose of this study, the subscales of “active coping” (three items) and “avoidant coping” (two items) were used. An example of active coping is “seeking multiple ways to solve a problem.” An example of avoidant coping is: “avoiding difficult situations.” All answers are on a four-point scale ranging from “seldom or never” (coded 0) to “very frequently” (coded 3) and the scale score consists of a mean. Reliability of these scales in the current study were .75 for active and .70 for avoidant coping, respectively.

Physical workload

To measure physical workload, mean scores on four items of the Job Content Questionnaire (JCQ, Karasek et al., 1998) were used. Response categories were presented on a four-level Likert-type scale, as follows: “totally disagree” (coded 0), “disagree” (1), “agree” (2) and “totally agree” (3). The internal consistency in this study was .89.

Statistical analyses

Multiple types of analysis were used within this study, all within the SPSS-14 package. The predictive validity was studied using logistic regression with the RTW outcomes (either partial RTW or full RTW) coded 1. Sensitivity to change was analysed with GLM repeated measures. Both GLM and logistic regression results were corrected for relevant covariates as described in the Results section.

Because two of the three samples also contained employees sick-listed with physical problems, we repeated our analysis on a sub-sample of employees with substantial psychological problems such as a clinical burnout or depression. All participants from the second sample were included in this subgroup. Individuals with above threshold scores on the MBI, CES-D or DASS from samples 1 and 3 were also included in this subgroup. The percentage of participants from each group that was included in this subgroup is presented in Table 1 as those with a “mental health disorder at baseline.”

Results

Descriptive statistics

As shown in Table 2, the distribution of baseline RTW-SE was different across these three samples. The means ranged from 3.27 to 4.24 ($F(2,2211) = 59.9, p < .01$) and standard deviations ranged from 1.13 to 1.31. A screening of the baseline data in the total sample indicated that the RTW-SE scale was normally distributed. All individual items also met normality criteria, although two items slightly exceeded the kurtosis threshold of 1 (items 6 and 9, see Table 3).

Table 2. Means (standard deviations) and Cronbach's alphas of the return-to-work self-efficacy scale at baseline and follow-up.

	Sample 1		Sample 2		Sample 3		Total	
	<i>M</i> (<i>SD</i>)	Alpha	<i>M</i> (<i>SD</i>)	Alpha	<i>M</i> (<i>SD</i>)	Alpha	<i>N</i>	Alpha
Baseline	4.24 (1.14)	.92	3.27 (1.31)	.95	4.08 (1.13)	.92	2214	.93
Two weeks	–		–		4.32 (.86)	.90	65	.90
Three months	–		4.02 (1.25)	.96	–		178	.96
Six months	–		4.37 (1.05)	.94	–		173	.94

Reliability

The internal consistency of the RTW-SE scale was examined on the baseline data (all three samples) and the follow-up data (from samples 2 and 3). The distributional properties and reliability estimates are presented in Table 2. The internal consistency was excellent over time and across samples ($> .80$).

Because we also designed the RTW-SE scale for evaluative purposes, the stability of the instrument over time was considered a key element. The test re-test reliability of the scale was studied within-sample 3 ($N = 65$) using the baseline measurement and at a two-week follow-up. Pearson correlation was .73 ($p < .01$), indicating adequate test re-test reliability (Evers, 2001). It must be noted that when the test-retests analysis was repeated within the selection with a mental health disorder at baseline (see Table 1, $N = 37$), the correlation drops to .47 ($p < .01$), while the internal consistency of the scale remains excellent at both measurements in this subgroup.

Validity

In line with our expectations (hypothesis 4) ANOVA analysis showed that participants who were sick-listed with a mental health disorder at baseline scored lower (mean = 3.81) on the RTW-SE scale than people without substantial mental health problems (mean = 4.89) ($F(1,2212) = 467, p < .01$). These results support the “known groups validity.”

Table 3. Factor loadings from exploratory principal component analysis.

Items of the return-to-work self-efficacy scale (RTW-SE)	Factor loading
1 I will be able to cope with setbacks	.83
2 I won't be able to complete my work tasks due to my emotional state*	.70
3 I will be able to set my personal boundaries at work	.75
4 I will be able to perform my tasks at work	.83
5 I will be able to deal with emotionally demanding situations	.85
6 I will have no energy left to do anything else*	.60
7 I will be able to concentrate on my work	.86
8 I will be able to cope with work pressure	.88
9 I won't be able to handle potential problems at work*	.66
10 I can motivate myself to perform my job	.78
11 I can deal with the physical demands of my work	.68

Note: *Reversed items.

Sample 2 allowed us to study the sensitivity to change of the RTW-SE scale over a six-month period (see Table 2 for the mean SE-scores). Sensitivity to change refers to the ability of a measure to detect minimal but clinically important changes in a construct. As all participants were receiving psychotherapy during the study, the number of therapeutic sessions at the time of measurement was taken into account as a covariate within the GLM repeated measures analysis. Results clearly indicated that SE increased within three months ($F(1,174) = 32.3, p < .01$) and within six months ($F(1,170) = 26.4, p < .01$) after the onset of therapy (baseline measurement).

To determine the underlying factor structure of the RTW-SE scale an exploratory principal components analysis was conducted. Based on Kaiser's rule of eigenvalues (Kaiser, 1960) a one-component solution was proposed. This one-factor solution (with a 6.5 eigenvalue), explained 59.3% of the total variance and was also supported by inspection of the screeplot. Factor loadings (shown in Table 3) on this scale were all high and varied between .60 and .88. Based on the results from the factor and reliability analysis, we concluded that RTW-SE was best conceptualized as a unidimensional construct.

Correlates of RTW-SE and several validating measures from samples 1 and 3 were studied for evidence of convergent and discriminant validity. Correlations presented in Table 4 support the hypothesized relationships. Higher GSE (hypothesis 1), a more internal locus of control (hypothesis 2) and a more active coping style (hypothesis 5b) were associated with higher levels of RTW-SE. Higher depression levels (hypothesis 3) and an avoidant coping style (hypothesis 5a) were related to lower levels of RTW-SE. Physical workload showed no relationship with RTW-SE (hypothesis 6). These patterns did not differ in significance or direction when applied to the subgroup of people with mental health problems, except that GSE and locus of control were no longer significant due to power problems ($N = 43$ and 44).

Predictive value

The predictive value of the scale was explored by analysing the relationship between RTW-SE and two outcome measures: partial and full RTW. First, the chance to be (partially) at work in relation to RTW-SE was analysed cross-sectionally. Including all three samples ($N = 2183$), logistic regression showed that higher baseline RTW-SE was associated with higher chances of partial work resumption ($\text{Exp}(B) = 1.30, p < .01$).

Table 4. Pearson correlations between the return-to-work self-efficacy scale and validating scales.

	Correlation with RTW self-efficacy scale
1. General self-efficacy	.48** ($N = 88$)
2. Locus of control	.35** ($N = 91$)
3. Physical workload	.03 ($N = 1931$)
4. Depression	-.51** ($N = 1895$)
5. Active coping	.18** ($N = 1914$)
6. Avoidant coping	-.27** ($N = 1902$)

Note: ** $p < .01$ (2-tailed).

In addition to the cross-sectional associations, longitudinal relations were studied within the second and third samples ($N=245$). Of these participants, 76% had partially and 40% had fully returned to work within three months. Logistic regression analysis showed that higher baseline RTW-SE was a strong predictor of partial ($\text{Exp}(B) = 1.45, p < .01$) and full RTW ($\text{Exp}(B) = 1.37, p < .01$) after three months.

To study the relative value of SE compared to other possible predictors a backward stepwise procedure was used. The following variables were included in the initial analysis: substantial psychological problems (yes or no), age, gender (female), duration of sickness absence and, for the prediction of full RTW, also partial RTW at baseline (yes or no) was included. These variables have been related to RTW in earlier studies within a population of employees with mental health problems (Dewa, Goering, Lin, & Paterson, 2002; van der Klink, 2002; Nieuwenhuijsen et al., 2006; Schroer, 1993). Elimination of non significant factors was based upon the Wald statistic ($< .05$), with the factor with the highest p -level being removed first. The results of the stepwise logistic regression analysis for the prediction of baseline partial RTW, three-month partial RTW and three-month full RTW are presented in Table 5.

Cross-sectionally RTW-SE was the strongest predictor of partial RTW. In addition, the chances for partial RTW were higher for younger people, women and employees with shorter absence spells. Longitudinally, RTW-SE remained the sole significant predictor of partial RTW after three months. Full RTW after three months was best predicted by baseline work resumption, but RTW-SE was of additional predictive value. Finally, the longer absence duration at baseline slightly decreased the chance for full RTW at three months. It can be concluded that, in accordance with our expectations (hypothesis 7), a higher baseline RTW-SE score was both cross-sectionally and longitudinally predictive of work resumption.

Discussion

The aim of this study was to explore the preliminary psychometric qualities of a newly developed RTW-SE scale. To our knowledge this is the first study that measures this

Table 5. Logistic regression results for significant baseline predictors of full and partial return to work.

	Wald	p -Value	$\text{Exp}(B)$	95% C.I. for $\text{Exp}(B)$
<i>Partial return to work at baseline</i>				
RTW-SE	44.67	.00	1.31	1.20–1.41
Age	4.34	.04	0.99	0.98–0.99
Female	4.27	.04	1.22	1.01–1.47
Absence duration	20.02	.00	1.04	1.02–1.05
<i>Partial return to work at 3 months</i>				
RTW-SE	9.20	.00	1.45	1.14–1.86
<i>Full return to work at 3 months</i>				
RTW-SE	7.07	.01	1.40	1.09–1.79
Absence duration	10.25	.00	0.96	0.93–0.98
Baseline partial return to work	6.44	.01	2.29	1.21–4.33

Note: RTW-SE = Return-to-work self-efficacy.

specific type of SE and relates it to an actual behavioural outcome within a longitudinal design. Several indicators of construct validity were investigated and the overall the patterns of relationships between RTW-SE and the variables investigated met theoretical expectations. The questionnaire was of excellent internal reliability, had adequate test-retest reliability, proved to be responsive to changes over time and was a robust predictor of actual RTW within three months.

Predictive validity

Our results showed that RTW-SE was predictive of the RTW status (not returned versus partially or fully returned) after three months. By using this behavioural outcome measure, combining subjective and objective measures, our study distinguishes itself from many other validation studies that use subjective self-report measures only. Actual RTW is an important outcome measure that not only reflects worker wellbeing but also includes financial benefits, for example, for the worker, the employer and society. The fact that RTW-SE proved to be predictive of actual RTW further indicates that the occupational performance domain was adequately sampled by the questionnaire, representing issues that are relevant for employees with mental health problems.

The predictive value of the instrument remained stable when several other relevant variables such as gender, age, duration of sick leave and initial RTW status were controlled for. The concept of SE therefore contributed to a better understanding of the underlying mechanisms for RTW among employees with mental health problems. Because RTW is embedded in a broad context (such as clinical, organizational and societal) in which many stakeholders have an influence, it can be expected that a variety of other contextual factors can play a role in the prediction of successful RTW (Sanderson et al., 2008) that were not included in this study. Many of these contextual factors (such as supervisory behaviour) might be reflected in the RTW beliefs the individual holds, thereby offering an interesting higher-order construct for clinical and research purposes. The nature and magnitude of the role SE plays within the RTW process, as compared to other variables, needs to be explored more in detail in future studies.

Unfortunately, the timeframe of our data was not sufficient to witness the full RTW of the majority of the sample. SE might play a different role in the prediction of the RTW for the cases that were still sick-listed after three months. Longer follow-up data are advisable in order to capture full RTW for the majority of the sample and possible relapses in absenteeism.

In addition, it should be noted that the SE baseline measurement on which these predictive results are based, are gathered on average 9–20 weeks after the onset of the sickness absence. Research shows that the nature and magnitude of predictors can vary depending on the different lengths of time out of work (van der Giezen, Bouter, & Nijhuis, 2000). In order to make our predictive findings generalizable in a broader context, it is advisable that future studies include workers in the earlier stages of their absence and from different counties.

Finally, future studies could investigate the relationship with RTW-SE with other outcome measures. The RTW-SE scale could be interpreted as a measure of expectations about work functioning. For people who have resumed their work (as part of our research population did) the scope of the questionnaire might have

shifted from expectations about work performance to subjective evaluation of actual work performance. It might be interesting to explore the predictive value of the RTW-SE scale for actual work performance after a period of sick leave, by comparing the RTW-SE scores with supervisor or colleague ratings of work-functioning or self-reports about work functioning.

Reliability

Because we wanted the RTW-SE scale to be useful for evaluative purposes, the stability of the instrument over time is an important feature of the questionnaire. We did find adequate test-retest reliability over a two-week period. However, it should be noted that RTW-SE is not a trait and can easily fluctuate over time within an individual, depending on day-to-day experiences (for instance, a phone call from a colleague, or a rainy versus a sunny day). The lower test-retest correlation we found within the subgroup with mental health problems at baseline might be indicative for this. One of the depressed workers in the expert group that assisted in the item generation mentioned for example, *“If I fill out this questionnaire before or after working out in the gym, I will probably give different answers to some of the questions.”* Especially if people receive treatment (as was the case in part of our test-retest sample) a rapid increase in SE is to be expected. The “acute phase,” in which many sick-listed employees with mental disorders find themselves, implies a dynamic nature of SE.

Construct validity

As mentioned before, the preliminary results on the construct validity were promising as the RTW-SE measure correlated with variables like GSE, locus of control, coping mental health and physical workload in a manner that is consistent with theory. High GSE and low depression were most strongly related to higher RTW-SE scores, but were also clearly distinct from RTW-SE, indicating a separate and unique construct.

A limitation regarding the construct validity is that we used self-report instruments for all the variables studied, which might lead to common method variance. The levels and the range of the correlations (between 0 and .51) do not strongly support this notion. Furthermore, the nature of the SE concept, aiming to capture subjective expectations, makes other methods such as observation less suitable for avoiding common method variance.

To provide more information about the construct validity of the RTW-SE scale, future research should ideally include a “gold standard” that captures the same construct. Until this gold standard exists, future studies might compare RTW-SE with other work-related or specific SE scales, such as the “SE for RTW items for musculoskeletal disorders” scale (Lötters et al., 2006) or the “General work skills SE scale” (Waghorn et al., 2005).

Relevance for employees with physical health problems

It should be noted that part of the sample consisted of people with physical disabilities, while the questionnaire was specifically developed for employees with mental health problems. Our analyses showed minor differences in the magnitude or

significance of our results between the total sample and the sub sample with mental health disorders. These differences appeared in the test-retest analysis and the correlations with GSE and locus of control. These results seem to be due to small sample size ($N=65$ for the total retest group and $N=37$ for those retested with a mental health disorder at baseline) and are probably unrepresentative for the entire population. For all the other relationships studied no notable differences were found between employees with predominantly physical health problems compared to those with mental health problems. The consistency of the results across populations might suggest that the RTW issues that were selected to match the specific situation of people with mental health problems are not that unique and also apply to a certain extent to other sick-listed workers. We did find higher RTW-SE scores however for physically disabled workers than for those with mental health disorders, suggesting that at least some of the items for expected work problems were less relevant to them. Also, people with physical disorders often report (minor) psychological problems as well. It is illustrative, for example, that only 17% of the employees in the first sample reported a mental health problem as the reason for their sick leave, while validated questionnaires show that 67% of all individuals in that sample had mental health problems that reached clinical levels at baseline. Although mental health complaints did not reach clinical thresholds within the whole sample, co-morbidity might explain the similar patterns across populations.

Practical implications and conclusions

The RTW-SE scale has many characteristics that make it attractive to vocational service providers, occupational health care workers and researchers. The questionnaire is nicely balanced with respect to its general focus and the concrete information it offers. The items are formulated with respect to general job demands and with full work resumption as a clear reference point. These features allow the scale to be used in a variety of occupations and over the course of the RTW process, even after people have fully returned to work. The instrument is likely to have a ceiling effect though, when used on a non-clinical population that experiences no work participation problems. The scale can be broadly used to monitor intervention results for sick-listed employees by both clinicians and researchers.

Concurrently, the items are both specific and directed towards a clear behavioural outcome. This makes the scale of high predictive value for this specific behaviour (RTW) and offers the care provider concrete information about the nature of their client's RTW expectations. Reintegration professionals are often confronted with patients who seem "unmotivated" to RTW, or fail to put skills to use in an occupational setting that were learned in a protected clinical setting (Gage, Noh, Polatajko, & Kaspar, 2004). A better grasp of RTW expectations might provide care providers with tools to manage this problem, enabling a more precise match of support to the assistance needs. A further advantage of the instrument is that concrete information can be derived from a relatively short scale, making it suitable to administer to people with mental health problems (who may experience concentration problems).

In future studies programs may be developed and evaluated that aim to enhance RTW-SE. SE theory offers many opportunities for the development of interventions that enhance SE. Bandura emphasizes the role of performance attainment as the

strongest re-inforcer of SE. When we apply this to RTW-SE, experiences of work resumption will clearly have an impact on the levels of RTW-SE. Stimulating success experiences by gradual RTW, for example, and reducing the risk of negative work performance experiences will be key elements in effective interventions.

Because of its predictive value, the RTW-SE scale may be used as a screener in either clinical practice or the occupational setting to indicate the direction of the guidance concerning RTW. Care providers may offer additional interventions (for example, to enhance SE) based on RTW-SE scores. For both screening and treatment evaluation purposes it would be beneficial that future studies gather RTW-SE scores from healthy workers for the purposes of comparison.

To conclude, this study has emphasized the importance of the construct of SE in the return to work process for employees with mental health problems. The specific SE measure that was validated in this study, the RTW-SE, showed encouraging psychometric properties and was easily administered within the target population across a variety of occupational settings. The instrument addresses the relevant expectations about RTW for employees with common mental health problems and predicts actual RTW success. This makes the RTW-SE scale a potentially valuable tool both in (occupational) health care settings and for research.

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