Guideline-based care of common mental disorders by occupational physicians (CO-OP study): a randomized controlled trial

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ABSTRACT

Objective
To evaluate the effectiveness of guideline-based care (GBC) of workers with mental health problems, which promotes counseling by the occupational physician (OP) facilitating return to work (RTW).

Methods
In a randomized controlled trial with police workers on sick leave due to mental health problems (n=240), trained OPs delivered GBC in the intervention group. Time to RTW and recurrences during 1-year follow-up, analyzed using Cox proportional hazards models, were compared to usual care with easy access to a psychologist.

Results
GBC by OPs did not result in earlier RTW than usual care. Subgroup analysis showed a small effect in favor of GBC for workers with administrative functions and/or ‘minor’ stress-related symptoms.

Conclusions
GBC did not differ in RTW compared to usual care, but may be beneficial for the majority of workers with ‘minor’ stress-related disorders.

Trial registration
www.controlled-trials.com; Identifier: ISRCTN34887348.
EFFECTIVENESS

INTRODUCTION

Common mental health problems or common mental disorders in workers, such as adjustment disorders, depression and anxiety, may affect functioning and often lead to reduced productivity at work and sick leave (1-4). Primary and secondary care usually focus on recovery of symptoms instead of work functioning and return to work (RTW) (5).

In The Netherlands, the first points of contact are the general practitioner (GP) and the occupational physician (OP) (6,7). As workers have to visit their OP when they are on sick leave, OPs may play a central role in the treatment of workers with common mental health problems. Both GPs and OPs often lack time and skills to optimally deal with these workers, resulting in a minimal approach (6-9). When complaints persist, workers are often referred to psychologists (10). Recent Dutch and Scandinavian studies suggest that easy referral to specialized secondary care may cause some negative consequences on duration until return to work (RTW) of the worker (11-13). Specialized secondary care even more than primary care, usually focuses on recovery of symptoms instead of work-related solutions. Consequently, GPs and OPs postpone the time to facilitate RTW as workers and their professional in secondary care may hinder this process. Additionally, referrals to specialized secondary care can be expensive.

As an alternative to this usual care (UC), ways have been sought to encourage OPs to play a more active role. In 2000, the Netherlands Society of Occupational Medicine (NVAB) published a practice guideline entitled ‘The management by OPs of workers with common mental health problems’ (14,15). The guideline promotes a more active role of the OP facilitating RTW of the worker, instead of a minimal role. The guideline was mainly evidence-based on the results of a study by Van der Klink et al. (16). In a cluster randomized trial, the intervention consisted of a training in an activating approach by OPs, in which OPs were enabled to operate as counselors using elements of cognitive behavioral therapy (CBT) and to facilitate RTW by work interventions. The intervention appeared to be effective in fastening RTW for workers with adjustment disorders, if compared to a passive UC. Although the guideline focuses on workers with more severe disorders as depression and anxiety as well, evidence for this relevant subgroup is scarce and the guideline more consensus-based. In a prognostic study, Nieuwenhuijzen et al. showed that guideline-based care may fasten RTW for workers on sick leave with common mental disorders, but reduces treatment satisfaction of the worker (9,11). Blonk et al. showed that for workers with work-related mental health problems a combined CBT-derived and workplace intervention delivered by occupational experts, appeared to be effective in reducing days until RTW, if compared to a CBT-intervention of psychotherapists, and UC (12). Comparable interventions showed to be (cost-) effective as well on RTW for workers with depression (17,18). In the mentioned studies, the interventions did not result in less reduction of mental health symptoms, than in UC.

These results indicate that a combined work and individual intervention by an occupational expert, as proposed in the OP-guideline, could be more effective in facilitating RTW, than passive care with easy referral to secondary mental health care. The aim of this study was to examine the effectiveness of a minimal intervention, a 3-days training course in guideline-based care (GBC) by OPs, using their individual CBT-counseling and occupational expert role in facilitating RTW (19). This study focuses on the effects for workers with common mental health problems on productivity loss (duration of RTW) and treatment satisfaction. The first hypothesis was that GBC will lead to earlier RTW and consequently to less productivity loss, compared to UC. As GBC may lead to a more professional and effective treatment, the second hypothesis was that workers, employers and OPs will be more satisfied with GBC than with UC.
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METHODS

Design
The present study is a randomized controlled trial (RCT), in which the effect of a minimal intervention in guideline-based care (GBC) was evaluated (19). After a 3-days training course for the participating OPs, workers in the intervention group received GBC by the OP. The control group received usual care (UC), with minimal involvement of the OP and, if applicable, easy access to a psychologist in secondary care.

The study was funded by the Dutch Ministry of Internal Affairs and Kingdom Relations, the Health Insurance agency for the Dutch Police force (DGVP) and the VU University Medical Center. The study design, protocol and procedures were approved by the Medical Ethics Review Committee of the VU University Medical Center.

Study population and recruitment procedures
This study was conducted with the cooperation of the Dutch police force, which is an organization with a relatively high incidence of sick leave due to common mental health problems (20). The participating police departments Zaanstreek-Waterland and Hollands Midden comprised a source population of 2500 police workers. Both participating police departments had contracts with the same occupational health service (OHS), i.e. Commit.

Since January 2002, each worker who consulted an OP, and was still on sick leave due to mental health problems, was asked by the OP to participate in the study. After a worker had signed informed consent, the OP unsealed a study envelope containing the allocated treatment for the patient, and sent the signed informed consent to the researcher (DR). In the same consultation the worker received the baseline questionnaires and first treatment satisfaction questionnaire and was asked to return them to the researcher after completion. Recruitment procedures, and inclusion and exclusion criteria are more extensively described in an earlier publication of the study protocol (19).

Randomization and blinding
Randomization in two groups was done at the patient level, with six blocks of size 50. To minimize the risk of irregularities by letting OPs open their treatment concealment themselves, randomization was checked by an independent researcher (AvdB) one year after the start of and at the end of the study. Participants, employers and OPs were not blinded for the intervention. The researchers were blinded for the treatment allocation and for protocol compliance as well.

Interventions
Usual care
Usual care consisted of minimal involvement of the OP and easy referral to a psychologist, which represents daily practice of the OHSs of the Dutch police force. Psychological treatment in secondary care was fully funded by the Health Insurance agency for the Dutch Police force (DGVP).

Intervention
The intervention consisted of guideline-based care (GBC) by OPs. OPs participating in the study received a 3-days training course by experienced OPs and psychologists in delivering GBC (19). The guideline is based on an activating approach, time contingent process evaluation and cognitive behavioral principles (14,15). The latter mainly concern stress inoculation training and graded activity and aim to enhance the problem-solving capacity of patients in relation to their work environment. Work-related interventions were
proposed if the cause of the mental health problems were work-related or resulted in work-disabilities. Proposed work-related interventions were gradual RTW, regular contact with the supervisor, work accommodations, all especially instigated when there was stagnation in RTW. The OPs were encouraged to use specific tools, such as symptom-questionnaires, patient information leaflets on stress, and day structuring exercises. To mimic a realistic situation, no activities were undertaken to improve the implementation of the guideline by the OP. After follow-up, guideline adherence was examined in a process evaluation, by auditing the medical files.

Risk of contamination
As all participating OPs received the training course and randomization was done on patient level, OPs treated patients from both groups. The advantage was that all participants were diagnosed in the same way. However, this situation created a risk of treatment contamination between the groups. We tried to maximize the contrast by creating a situation in which referral to the psychologist in UC was always granted by the insurance company (DGVP). By this pre-authorization, OPs were instigated to refer immediate to a secondary care psychologist in UC, and initiated to deliver GBC in the intervention group.

Outcomes
Productivity loss
The primary outcome measure in our study was productivity loss, which consisted of first RTW, full RTW and total productivity loss. First and full RTW are defined as the duration of sick leave due to mental health problems in calendar days from the moment of inclusion to first (partial or full) and full RTW respectively in own or equal earnings (21,22). Total productivity loss is the duration of sick leave days until full RTW added with number of days of recurrences on sick leave in the one-year follow-up. Sick leave data were gathered from records of the police departments, which is more accurate than from self-report (23).

Treatment satisfaction
Treatment satisfaction is a relevant outcome measure in occupational health care and therefore another primary outcome (11,24). Worker and employer satisfaction were measured at baseline (T1), during treatment (T2) and after full RTW (or one-year follow-up if no full RTW yet;T3) using a short version of the Patient Satisfaction with Occupational Health professionals Questionnaire (24). This questionnaire refers to different aspects of the treatment by the OP and was sent to all the participants and their supervisors (19). To measure treatment satisfaction by the OPs themselves, OPs filled in an evaluation questionnaire for each worker treated at T3.

Prognostic measures
Data about personal, treatment and work characteristics were gathered from the records of the police departments (e.g. type of function) and of the medical files of the OHSs (e.g. work-relatedness of the disorder according to the OP). Severity of depression, anxiety and stress was measured at baseline (T1), by using the Depression Anxiety Stress Scales (DASS-42) (25,26) and the Hospital Anxiety Depression Scale (HADS) (27).

Statistical analyses
All analyses were conducted according to the intention-to-treat principle and were performed at the individual level. Baseline measurements and RTW characteristics of the
two groups were compared by using Chi-square and Independent T-tests, after imputing missing by mean values. The evaluations on the effectiveness of the intervention were performed with two-tailed tests at a significance level of 5% (P < 0.05). Two statistical models were used for the different outcomes.

First, differences in the data on (first) RTW were examined by using Kaplan Meier curves, in which participants lost to follow-up were censored, and the Cox proportional hazards model. Recurrences of sick leave for any reason during follow-up were added to the Cox proportional hazards model for recurrent events with the time to event approach (28). Second, treatment satisfaction during treatment (T2) and after full RTW or one-year follow-up (T3) were studied in a linear regression model as a long term effect with treatment satisfaction at the start of the treatment (T1) as a covariate.

If necessary, analyses were adjusted for prognostic dissimilarities between the baseline measurements of both groups. Gender, OP (as nested dummy variable), severity of the disorder (cut-off scores DASS-depression/anxiety) (26), work relatedness of the disorder, and type of function (executive versus administrative) were considered as a potential effect-modifier and tested on interaction effects. Statistical analyses were performed using SPSS 14.0 and Stata 8.0.

RESULTS

Participants and baseline data
The recruitment of participants for the study started in January 2002 and ended in January 2005, with a one year follow-up period (figure 1). Since January 2002, 489 workers were registered as being absent from work due to mental health problems by the OHS (T -1, figure 1). Of those, 240 workers who consulted an OP were asked by the OP to participate in the study and signed informed consent (T 0). Figure 1 shows that the mental health symptoms questionnaires (DASS/HADS) and the first worker satisfaction questionnaire (T1) were returned by 213 of the 240 participants (89%). The response for returning questionnaires at T1 was lower for the employer (53%). Questionnaires of T2 were not used in the analyses, nor mentioned in figure 1, as these were not sent to each participant and response was minimal. The response rate at T3 was 80% for both workers and employers, and 91% for OPs. In total 16 participants were lost to follow up. 15 because they left the police force during their RTW-process, one committed suicide. According to the intention-to-treat principle, their RTW data were censored in the analysis to include all potential information. Baseline data are shown in table 1. There were no significant differences in participant characteristics between the groups.
Treatment characteristics and outcomes on productivity loss
Table 2 presents the differences between the groups for each of the treatment characteristics and outcomes on productivity loss. No differences were found in the number of consultations with the OP during the sick leave period; 3.3 in UC versus 3.4 in GBC. In UC 94 (82%) workers were referred by the OP to a ‘funded’ psychologist. As was intended by our study protocol, the number of referrals to a ‘funded’ psychologist were higher and faster in UC than in GBC (n=47 (38%)). During one-year follow-up, 98 workers (85%) in UC received psychological treatment, compared to 58 (46%) in GBC. In GBC significant more participants partially returned to work (69%) before full RTW, compared to UC (54%) (p=0.01). The number of recurrences of sick leave periods was higher in GBC, but this did not result in significantly more sick leave days in GBC.

Table 3 presents the median scores and the adjusted hazard ratios on the different productivity loss outcomes of both groups. No clear effects of the intervention were found. Figure 2 shows the adjusted Cox regression curves for GBC and UC on full RTW (one minus survival function at mean of covariates).

Ancillary analyses on productivity loss
Gender, age, number and days of sick leave periods in the previous year, type of function and severity of the disorder were added as a potential effect-modifier in the adjusted Cox proportional hazard models productivity loss outcomes. The type of function showed
### Table 1 Characteristics of the study population

**Patient characteristics**

<table>
<thead>
<tr>
<th></th>
<th>GBC n=125</th>
<th>UC n=115</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in years, mean (sd)</td>
<td>38.8 (8.4)</td>
<td>40.0 (9.5)</td>
<td>0.27</td>
</tr>
<tr>
<td>Gender (% male)</td>
<td>51.2</td>
<td>60.5</td>
<td>0.15</td>
</tr>
<tr>
<td>Children (%)</td>
<td>66.4</td>
<td>63.2</td>
<td>0.68</td>
</tr>
<tr>
<td>Married or cohabiting (%)</td>
<td>66.4</td>
<td>68.4</td>
<td>0.78</td>
</tr>
</tbody>
</table>

**Work related characteristics**

<table>
<thead>
<tr>
<th></th>
<th>GBC</th>
<th>UC</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police department (% PHM)</td>
<td>70.4</td>
<td>64.0</td>
<td>0.33</td>
</tr>
<tr>
<td>Mean contract hours a week, mean (sd)</td>
<td>33.6 (6.2)</td>
<td>34.1 (6.0)</td>
<td>0.47</td>
</tr>
<tr>
<td>Executive work (%)</td>
<td>59.2</td>
<td>65.8</td>
<td>0.35</td>
</tr>
<tr>
<td>Irregular work (%)</td>
<td>59.2</td>
<td>62.5</td>
<td>0.76</td>
</tr>
<tr>
<td>Work relatedness mental health disorder (%)</td>
<td>48.8</td>
<td>44.7</td>
<td>0.39</td>
</tr>
</tbody>
</table>

**Absenteeism previous year**

<table>
<thead>
<tr>
<th></th>
<th>GBC</th>
<th>UC</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N sick leave periods previous year, mean (sd)</td>
<td>2.7 (2.2)</td>
<td>2.5 (1.9)</td>
<td>0.53</td>
</tr>
<tr>
<td>Days of sick leave in previous year, mean (sd)</td>
<td>56.9 (61.4)</td>
<td>56.1 (86.0)</td>
<td>0.94</td>
</tr>
</tbody>
</table>

**Severity of disorder (symptoms HADS/DASS)**

<table>
<thead>
<tr>
<th></th>
<th>GBC n=112</th>
<th>UC n=101</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HADS-Anxiety, mean (sd)</td>
<td>11.4 (3.8)</td>
<td>11.4 (3.8)</td>
<td>0.92</td>
</tr>
<tr>
<td>HADS-Depression, mean (sd)</td>
<td>11.5 (4.4)</td>
<td>11.8 (4.5)</td>
<td>0.60</td>
</tr>
<tr>
<td>DASS-Stress, mean (sd)</td>
<td>9.2 (7.3)</td>
<td>9.0 (6.8)</td>
<td>0.91</td>
</tr>
<tr>
<td>DASS-Anxiety, mean (sd)</td>
<td>4.2 (5.5)</td>
<td>3.9 (5.2)</td>
<td>0.69</td>
</tr>
<tr>
<td>DASS-Depression, mean (sd)</td>
<td>6.9 (7.4)</td>
<td>6.6 (7.4)</td>
<td>0.78</td>
</tr>
</tbody>
</table>

| Depression and/or Anxiety based on DASS (%)* | 34.8 | 29.0 | 0.38 |

* Based on cut-off scores Nieuwenhuijsen et al. (2003): >12 on symptoms depression and >5 on symptoms of anxiety

### Table 2 Differences for treatment and productivity loss (RTW) characteristics

**Treatment characteristics**

<table>
<thead>
<tr>
<th></th>
<th>GBC n=125</th>
<th>UC n=115</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N consultations OP, mean (sd)</td>
<td>3.4 (2.3)</td>
<td>3.3 (2.3)</td>
<td>0.75</td>
</tr>
<tr>
<td>N consultations GP, mean (sd)</td>
<td>1.9 (1.4)</td>
<td>1.9 (1.2)</td>
<td>0.98</td>
</tr>
<tr>
<td>Referral ‘funded’ psychologist by OP, n (%)</td>
<td>47 (38)</td>
<td>94 (93)</td>
<td>0.00</td>
</tr>
<tr>
<td>Treatment psychologist during follow-up, n (%)</td>
<td>58 (46)</td>
<td>98 (97)</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**Productivity loss (RTW) characteristics**

<table>
<thead>
<tr>
<th></th>
<th>GBC</th>
<th>UC</th>
<th>P-value</th>
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<tbody>
<tr>
<td>Return to work – process</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Immediate) Full RTW (%)</td>
<td>31</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Partial RTW (%)</td>
<td>69</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Duration partial RTW, mean days (sd)</td>
<td>53.1 (56.3)</td>
<td>50.6 (78.4)</td>
<td>0.28</td>
</tr>
<tr>
<td>N recurrences, mean (sd)</td>
<td>1.7 (1.9)</td>
<td>1.4 (1.5)</td>
<td>0.08</td>
</tr>
<tr>
<td>Duration of recurrences, mean days (sd)</td>
<td>19.4 (39.0)</td>
<td>18.6 (39.1)</td>
<td>0.95</td>
</tr>
</tbody>
</table>

### Table 3 Differences with Cox regression for productivity loss outcomes

<table>
<thead>
<tr>
<th></th>
<th>GBC n=125</th>
<th>UC n=115</th>
<th>Hazard Ratio</th>
<th>P-value</th>
</tr>
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<tbody>
<tr>
<td>Partial RTW, median days (CI)</td>
<td>50 (34-66)</td>
<td>47 (31-63)</td>
<td>0.99 (0.75-1.31)¹</td>
<td>0.94</td>
</tr>
<tr>
<td>Full RTW, median in days (CI)</td>
<td>105 (84-126)</td>
<td>104 (81-127)</td>
<td>0.96 (0.73-1.27)¹</td>
<td>0.78</td>
</tr>
<tr>
<td>Total productivity loss, mean days (SD)</td>
<td>151 (97)</td>
<td>147 (102)</td>
<td>1.21 (0.86-1.71)²</td>
<td>0.28</td>
</tr>
</tbody>
</table>

¹ Adjusted HR for OP, HADS-total, children and n sick leave periods previous year
² Adjusted HR for OP, DASS-depression/anxiety, work relatedness, n sick leave periods previous year
significant interaction with the intervention on differences in full RTW (p=0.03). Workers in administrative functions seemed to benefit more from the intervention than their colleagues with executive functions (‘working on the street’). In the adjusted proportional hazards model for recurrent events a significant interaction effect (p=0.02) was found for the severity of the disorder (DASS-depression/anxiety) with the intervention on total productivity loss. When recurrent work absence periods during follow-up were taken into account, GBC seemed more effective for workers with ‘minor’ stress related symptoms when compared to UC. For this subgroup (n=172), the Hazard Ratio was 1.28 with a p-value of 0.22 (CI=0.85-1.93, adjusted for OP, sick leave year before, OHS, function). After imputing missing by mean DASS-values the subgroup of DASS-stress grew from 145 to 172 workers. This did not influence our results, as the 27 participants who did not return the DASS-questionnaires did not differ in gender, age, and RTW-data of the other participants. For workers with a depressive or anxiety state according to the DASS cut-off-scores UC seemed more effective than GBC. For this subgroup (n=68), the Hazard Ratio was 0.67 with a p-value of 0.21 (CI=0.36-1.26, adjusted for diagnosis OP (stress vs rest), OP, gender). So each of both subgroups was not significant, but the difference was.

Outcomes treatment satisfaction
Table 4 presents the scores on treatment satisfaction, which were recoded into mean scores on a scale of 0-10 for worker and employer satisfaction and 1-10 for the evaluation of the OP. No significant differences were found in the mean worker and employer satisfaction scores between the groups, nor univariate nor with a linear regression model adjusted for worker and employer satisfaction at T1. A significant reduction in all mean worker satisfaction scores was found with a one sample T-test between the start of the treatment (T1) and after full RTW or one-year follow-up (T3) (n=178; mean Δ T = 1.07; p=0.00). The evaluation scores of the OP about the treatment process were significantly higher in GBC compared to UC (p=0.03).
DISCUSSION

Interpretations
The intervention did not show an effect on productivity loss in our study sample of police workers on sick leave due to mental health problems who consulted their OP. Ancillary analyses showed a significant interaction between the treatment group and the severity of the disorder on total productivity loss, when taking into account the recurrent sick leave periods during follow-up. For the substantial group of workers with ‘minor’ mental health symptoms (according to the DASS) GBC seemed to be more effective on reducing productivity loss, while UC seemed beneficial for workers who reported more ‘severe’ symptoms of depression and anxiety. Additionally, in ancillary analyses a significant interaction was found between the treatment group and the type of function on full RTW. GBC seemed more effective for the administrative functions compared to executive functions. Treatment satisfaction rated by the OP about the treatment process was significantly in favor of GBC. Satisfaction of the worker about the treatment by the OP diminished significantly in both groups between the start of the treatment and after full RTW.

Strengths and limitations
In this RCT the effectiveness of a practice guideline was assessed. Although the guideline has been evaluated in a pragmatic setting, many requirements for a high quality trial were met. A representative intervention setting, in which patients were recruited over the same period of time and from the same source population, guarantee external and internal validity. Losses to follow-up and principal confounders were taken into account, and the study had sufficient power to detect a clinically important effect.

This study represents a further step in the evaluation of guideline-based care for workers with common mental health problems. The trial was unable to prove the hypothesis that the intervention was more effective on RTW than usual care. However, this may be due to limitations in validity of the guideline, treatment potential of the OPs, and contamination between the intervention and the control group used.

<table>
<thead>
<tr>
<th>Table 4 Treatment satisfaction worker and employer, evaluation by OP</th>
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<tbody>
<tr>
<td><strong>Satisfaction</strong></td>
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<tr>
<td><strong>Time</strong></td>
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<td><strong>Group</strong></td>
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<tr>
<td><strong>General</strong></td>
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<td><strong>Interpersonal</strong></td>
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<tr>
<td><strong>Efficacy</strong></td>
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<td><strong>Process</strong></td>
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¹ T1 = Treatment satisfaction after the moment of inclusion (start of intervention)  
² T3 = Treatment satisfaction after the moment of full RTW of the worker (end of treatment) or after one-year follow-up
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Validity of the guideline
The inclusion criteria used in our study might have been too broad, leading to a heterogeneous study sample. Possibly, workers with either almost none or with many, more severe symptoms may not have been sensitive to the intervention. The guideline is mainly based on evidence of a study showing effect on adjustment disorders (16). Therefore, the guideline may not have sufficient external validity to be applied to broad range of symptoms as advocated. A minor, but substantial group of workers, may have had symptoms of a more chronic nature, who needed more extensive care as was given in GBC. As our intention was to study the effects of the complete guideline in practice, we believe that our results give relevant insight in the overall effect of the guideline for a broad study sample.

Occupational physicians (OPs)
The lack of effect may be due to the treatment potential of the OPs as well. They are the gatekeepers of occupational health care and have extensive workloads. The guideline promotes an intensive form of treatment, which may have been a barrier to implement the guideline in their daily practice (8). Alternatively, the training in the guideline might have been too minimal, or the training hours too short for the OPs to actually learn the necessary skills. However, Smits et al. showed that a problem-based learning program for this guideline, which corresponds with the training in our study, appeared to be effective in improving performance in postgraduate education of OPs (29).

Contamination between intervention and usual care
As randomization was done at the individual level, OPs who were trained in the guideline treated all participants. Obviously this situation created a risk of treatment contamination between the groups. A cross-over learning effect may have happened in UC, since the OP can deliver GBC in UC as well. In the GBC group, the OP may have referred a worker to a psychologist as well. The guideline promotes this in case of stagnation in recovery or in case of severe mental health problems of the worker (14,15). However, we tried to maximize the contrast by creating a situation in which referral to the psychologist in UC was always granted and pre-authorized by the health insurance company (DGVP). The results indicate that there is a lack of contrast as a result of contamination, which may have negatively influenced the impact of the intervention which was evaluated.

Generalization
The study population, Dutch police workers, has a higher risk of getting into stressful situations than other workers (20,30). To a certain extent this reflects that police workers have other occupational risks than the general working population. As the study population will not be fully representative of the general working population, external validity of study results may be limited and caution has to be taken in generalizing the results. This disadvantage does not outweigh the advantages of this study population. The police is an interesting target population, as it has a relatively high incidence of common mental health problems. Other advantages are a uniform sick leave registration and a well-defined ‘usual care’.

Overall evidence
This study is the first RCT to evaluate the effectiveness of GBC in primary and occupational health care for mental health problems with productivity loss as a primary outcome. Earlier publications about a minimal intervention strategy to enhance treatment in primary care of patients with common mental health problems did not result in a
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reduction of productivity loss (31-33). Recent Cochrane reviews of RTW interventions on adjustment disorders and depression show that a combined intervention on individual and work aspects, conducted in an occupational health care setting, is effective in fastening RTW (34,35). A minimal combined intervention on individual and work aspects, represented in this study by GBC of OPs, seems promising for workers with ‘minor’ stress-related disorders. Workers with ‘more severe’ symptoms seem to benefit from early detection and a fast and accurate way to get sufficient mental health care. Wang et al. showed that this reduces productivity loss of depressive workers in a company setting in the United States (36). More studies are needed, especially in other countries than The Netherlands, to confirm the effectiveness of (preventive) combined individual and work-related interventions in guideline-based care.

Conclusions
Counseling of common mental health problems by OPs using a guideline after a 3-days training course did not clearly differ in reducing productivity loss and treatment satisfaction compared to usual care. However, workers with ‘minor’ stress-related disorders may benefit from guideline-based care. Results of this study contribute to the further development of effective evidence-based guidelines and collaborative occupational health care for workers with common mental disorders.

ABBREVIATIONS
CI = Confidence Interval
CBT = Cognitive Behavioral Therapy
DASS = Depression Anxiety Stress Scale
DGVP = Health Insurance agency for the Dutch Police force
GBC = Guideline-based care (intervention group)
GP = General practitioner
HADS = Hospital Anxiety Depression Scale
NVAB = Netherlands Society of Occupational Medicine
OHS = Occupational Health Service
OP = Occupational Physician
RTW = Return to work
UC = Usual care (control group)

REFERENCES


