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Screening for depression in the occupational health setting

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Background	The cost of workplace absenteeism and presenteeism due to depression in the USA is substantial.
Aims	To assess the frequency of depression and its impact at the point of care in an occupational health (OH) practice.
Methods	Patients presenting to an OH practice completed a standardized depression screening tool and were compared to an unscreened group in the same clinic. Respondents with a nine-item Patient Health Questionnaire (PHQ-9) score >15 and untreated for depression were referred for further evaluation per usual practice. A comparison group of unscreened patients were selected from the same clinic from 1 year prior and records were reviewed for evidence of prior depression, treatment and outcomes. After 1 year, frequency of depression, PHQ-9 scoring for screened patients, days absent from work, days on restricted duties and permanent restrictions were recorded for both groups.
Results	Two hundred and five patients were screened for depression. Screening was associated with increased frequency of a diagnosis of current depression (30 versus 4%; $P < 0.05$). Screening was associated with similar rates of absenteeism but lower number of days on restricted duties (97 versus 159 days; $P < 0.001$). After adjusting for age, sex, history of and treatment for depression, screening was associated with lower odds of being on work restrictions [odds ratio (OR) 0.55; 95% confidence interval (CI) 0.38–0.78] or permanent restrictions (OR 0.35; 95% CI 0.23–0.52).
Conclusions	Depression was common in this OH practice. Screening for depression, with appropriate recognition and referral, may reduce time for employed patients on restricted duties and permanent restrictions.
Key words	Depression; disability management; occupational health; screening.

Introduction

Nearly 10% of adults in the USA have depression [1] with total economic costs estimated at >$83 billion dollars per year (£55 billion pounds), while Great Britain has costs of £9 billion per year [2,3]. In Europe, depression is associated with €92 billion in costs [4]. Of the US cost, $51.5 billion dollars results from workplace absenteeism and presenteeism [2]. It is estimated that those with depression miss 14 days of work per year [5] with only 50% of individuals with depression receiving appropriate treatment [6].

While screening for depression is often a part of wellness screening for employees [7], there has been no published research on the occupational outcomes of screening for depression at the point of care in an occupational health (OH) clinic setting. This study therefore aimed to evaluate the association between the act of screening for depression and workplace outcomes in a US OH clinic.

Methods

The study took place in a medical centre OH clinic caring for the centre's employees, with the majority of employees self-referring with work-related and non-work-related illness and injury. A minority of referrals are by primary physicians or specialists requesting management of work restrictions and return-to-work plans. The study received ethical approval by the institutional review board.

Employees presenting to the clinic were screened for depression using the nine-item Patient Health Questionnaire (PHQ-9) [8]. OH professionals (physicians, nurse practitioners and medical residents) working in the clinic were encouraged to refer employees for further evaluation and treatment for PHQ scores >15, but free to make recommendations as per their usual practice. There was no consistent treatment or intervention provided by these OH professionals other than the screening with the PHQ-9. Screened employees were compared with employees presenting during the same time period of the prior year. Controls were not matched for age and gender. In addition to PHQ-9 data, information was collected for gender, age, type of OH professional appointment date, absence or restricted work and associated duration, injury or illness categorization, prior history of depression, current medications and permanent restrictions.

Baseline characteristics between the intervention and the control groups were compared using nonparametric Mann–Whitney tests for continuous variables and chi-square tests for dichotomized variables. Multivariate linear regression models were used to evaluate the effects of the intervention on the outcomes. Confounding variables were selected from the baseline characteristics to best fit the models using variance inflation factor, the Akaike's Information Criterion and Box-Tidwell test. The models were adjusted for age, gender, history of depression, antidepressant medication and other psychiatric medications. All analyses were conducted using STATA version 12.1 (StataCorp, College Station, TX). Tests were considered statistically significant at $P < 0.05$.

Results

Two hundred and five employees (19% of eligible participants) were screened and completed a PHQ-9. Both cohorts had age and gender distributions consistent with the demographics of the medical centre, with an average employee age of 41 years, and ~70% female [9]. There were no significant differences between intervention and control groups for age and gender, and the two groups had a similar frequency of prior depression (Table 1).

Neither the type of OH professional nor the severity of depression appeared to impact on permanent restrictions. Male gender reduced the likelihood of permanent restrictions, and age above the mean increased the likelihood of permanent restrictions.

Screening for depression was associated with an increased diagnosis of depression compared with controls (30 versus 4%; $P < 0.001$). There was no significant difference in duration of absence or percentage assigned workplace restrictions. However, the duration of restricted work was reduced to 97 days for screened employees compared with 159 days for controls ($P < 0.001$).

Table 1. Patient characteristics

	Control (n = 255)			Intervention (n = 205)			P
	Mean	SE	95% CI	Mean	SE	95% CI	
Age	41.5	0.68	40.1–42.8	41.9	0.79	40.3–43.4	NS[b]
Gender							NS
Male	68			39			
Female	187			166			
Provider type							NS
Nurse practitioner	37			42			
Specialty physician	193			146			
Resident/fellow	25			17			
	n (%)			n (%)			
Long-term disability[a]	16 (16)			13 (9)			NS
Antidepressant	91 (42)			62 (30)			<0.05
Prior depression	89 (41)			76 (37)			NS
New depression	9 (4)			61 (30)			<0.001
On restriction							
Yes	182 (83)			155 (76)			
No	36 (17)			49 (24)			
Restriction duration (days)	159	11	138–181	97.0	9.64	78–116	<0.001
Permanent restriction							<0.001
Yes	77 (36)			36 (18)			
No	141 (64)			168 (82)			
Any time off work?							NS
Yes	76 (26)			57 (28)			
No	161 (74)			146 (72)			

NS, not significant.
[a]Long-term disability is defined as being completely off work for >13 weeks.
[b]Not significant P value.

After adjusting for age, gender, history of depression and medication use, screening was associated with lower odds of being assigned temporary work restrictions [odds ratio (OR) 0.55; 95% confidence interval (CI) 0.38–0.78] or permanent restrictions (OR 0.35; 95% CI 0.23–0.52) (Table 2).

Discussion

In this study, screening for depression appeared to have an impact on return-to-work outcomes in a wide range of employees including those presenting for non-mental health concerns. The data demonstrated a 39% reduction in restricted work days for the screened cohort. It is possible that the availability of screening information increased provider awareness of a potential mood disorder and resulted in an increased likelihood of referral for diagnosis and treatment. However, referral based on PHQ-9 results was not compulsory, and no specific treatment was specified. The reduction in restricted work days and decreased odds of needing permanent work restrictions can be viewed as resulting from the act of screening and increased awareness of depression, both by the employee and the OH professional. Screening revealed an increased need for depression diagnosis and treatment that otherwise was not clinically obvious. These results underscore the importance of mental health in recovery from all conditions and the opportunity to improve occupational outcomes by increasing diagnosis of depression.

Table 2. Multivariate analysis

	OR	SE	95% CI	*P* value
Temporary restriction (yes versus no)				
Intervention	0.55	0.1	0.38–0.78	<0.001
Age^2 0.5[a]	1.47	0.09	1.30–1.65	<0.001
Male	0.45	0.03	0.39–0.52	<0.001
Other drug	1.71	0.26	1.27–2.29	<0.001
Antidepressant	0.78	0.21	0.45–1.33	NS
Prior depression	1.84	0.33	1.30–2.60	<0.001
Permanent restriction (yes versus no)				
Intervention	0.35	0.07	0.23–0.52	<0.001
Age^2 0.5[a]	1.79	0.05	1.70–1.88	<0.001
Male	0.38	0.12	0.21–0.69	<0.001
Other drug	2.36	0.34	1.77–3.14	<0.001
Antidepressant	1.34	0.58	0.58–3.14	NS
Prior depression	0.98	0.23	0.62–1.55	NS
Newly diagnosed depression score (yes versus no)[b]				
Intervention	15.0	4.06	8.80–25.5	<0.001
Male	0.63	0.04	0.55–0.72	<0.001
Other drug	1.92	0.3	1.41–2.6	<0.001
Prior depression	12.8	3.13	7.94–20.7	<0.001

NS, not significant.
[a]Square root(^{2}) of age utilized, instead of age, to normalize the distribution of age.
[b]Age deleted for better fit of the model.

The strengths of this study are the use of a simple to administer, freely available, validated screening tool that can be easily implemented in an OH practice. Limitations include the low participation rate, limited generalizability (mostly female health care workers in a single geographic location) and possible selection bias (i.e. enrolling those most concerned about depression). While the latter would increase the frequency of depression, it is unlikely to have an impact on differences in disability outcomes.

Depression as a primary diagnosis is a common cause of debility, absenteeism and presenteeism in the working age population. Screening in the OH setting may identify those in whom undiagnosed depression could be treated with resulting improvement in occupational outcomes [10]. Further research is needed to investigate different occupational settings as well as diverse gender and racial groups. The addition of specific treatment for occupational patients who screen positively for depression could further improve outcomes. A prospective study focused on depression as an occupational comorbidity could help to quantify the impact of depression on return to work when the primary issue is not mental health. In addition to improving the health of employed persons, there is significant potential for decreased costs to employers and health systems by identifying depression.

Key points

- Depression is common in occupational health practice.
- In this study, screening for depression using nine-item Patient Health Questionnaire with appropriate referral reduced days on restricted duty.
- Screening for depression using nine-item Patient Health Questionnaire with appropriate referral reduced days on permanent restrictions.

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