

Effect of Educational Intervention on General Health and Depression in Temporary Employees

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ABSTRACT

Background: Mental health disorders and depression are pervasive and costly problems for workplaces. The aim of this study was to examine the general health and depression in temporary employees and the effect of educational intervention on general health and depression in temporary employees in Isfahan steel company.

Methods: A quasi-experimental design was used to examine the effect of intervention among temporary employees of Isfahan steel company. All temporary employees of blast furnaces were studied by census method. Data were collected by questionnaires including GHQ-28, BDI-II before and after a brief three-session CB educational intervention and were analyzed by SPSS12.

Results: According to the GHQ-28 scores; 16.9% were suspected to psychological disorders; 3.4% also recorded severe depression. Mean depression scores decreased significantly after the intervention (CI: 3.21-6.94). General health scores also decreased significantly after the intervention (CI: .97-5.03).

Conclusion: Brief cognitive behavior educational intervention can be considered as a preliminary education for employees to develop skills to cope with depression, and included in a more extensive education to attain longer-term results.

Key words: Cognitive behavior intervention, depression, general health, temporary employee

INTRODUCTION

Mental health disorders frequently category as the first or second most common cause of extended sick leave from work, the International Labor Organization considers that psychosocial problems make up, in the world, one of the major causes of accidents, illness, absenteeism, and death in the workplace.^[1]

Numerous studies indicate that depressive disorders are among the most common forms of mental illness in the nations. World Health Organization estimated that depression will emerge as one of the leading causes of disability globally, second only to ischemic heart disease by the year 2020.^[2]

Also it was reported by Global Burden of Disease Study that major depression was the fourth leading cause of disease burden universal, accounting for approximately 12% of all total years lived with disability.^[3]

However, depression is one of the most misdiagnosed, undiagnosed and untreated illnesses, depression is a considerable contributor to mortality with its association with suicide.

As such, it can to a great extent increase morbidity, mortality and cost. Depression, however, also remains a condition whose impact may continue to be underestimated. It is likely that significant proportions of patients with depressive symptoms are still not being detected or treated, even those with severe symptoms.^[4]

Mental health has progressively more become a concern for many workplaces due to factors such as increased awareness of mental health issues in the general population, improved understanding of how mental disorders such as depression impact functioning and growing recognition that depressive disorders are highly prevalent in the workplace and have an extremely negative impact on performance, productivity, absenteeism, and disability costs.^[5]

Workplace depression can result in employees having poor morale, decreased productivity and quality of work, difficulty concentrating, more proneness to mistakes, increased tardiness or absenteeism, a higher risk for workplace accidents, increased turnover rates, an argumentative personality and a tendency to be forgetful, and more likelihood to engage in alcohol or drug abuse.^[6]

Some studies have examined the economic impact of depression in the workplace for example a study at the First Chicago Corporation; short-term disability data, medical plan costs and Employee Assistance Program referral data for depressive disorders were compared with selected common chronic medical conditions. The results showed the average length of disability and the disability relapse rate was greater for depressive disorders than for the comparison medical groups. Depressive disorders were also found to have the largest medical plan costs of all behavioral health diagnoses.^[7]

Early detection of mental disorders and depression as an essential step in primary prevention is considered. As the burden of depression and mental disorders increases, it is logical that costs will continue to rise. Employers may experience

obliged to protect their employees and financial property by developing effective and cost benefit interventions to better manage and eventually prevent depression and mental disorders in the workplace; with regard to the relevant literature, studies on the effectiveness of these intervention in workplace are called for.^[8]

The aim of this study was to examine the general health and depression in temporary employees and the effect of educational intervention on general health and depression in temporary employees in Isfahan steel company.

METHODS

Design and participants

A quasi-experimental study was used to examine the effect of educational intervention among temporary employees of Isfahan steel company. Sampling method in this study was the census. Eighty-nine employees of Blast Furnaces in Isfahan steel company; the oldest iron and steel maker of Iran and one of the three main sources of iron and steel in Iran^[9]; participated in the study.

Employees of blast furnaces were chosen for study due to their unpleasant work environment and hard and dangerous duties. All temporary employees of blast furnaces were requested to volunteer to participate in the study.

From a population of 95 temporary employees, 89 individuals volunteered to participate and studied by census method. The questionnaires were distributed one week before the intervention and again one month after the intervention. Thirteen participants dropped out of the intervention and 76 participants completed the study.

Measurers

Demographic data were measured by a short questionnaire including age, years of education, duration of occupational career, marital status. General health was measured by general health questionnaire (GHQ-28). GHQ-28 is a measure of current mental health and as its development by Goldberg in the 1970's it has been widely used in different settings and different cultures.^[10]

This questionnaire has four main components as follows: physical symptoms, anxiety and insomnia, impairment in the social function and depression.

Iranian version of the GHQ-28 was used to measure general mental distress. Studies on the validation of the GHQ-28 in Iran revealed that Iranian version of the GHQ-28 has a good structural characteristic and is a reliable and valid instrument that can be used for measuring psychological well being in Iran.^[11,12] Participants were asked to indicate whether they had recently experienced a range of common symptoms of distress, which were rated on a 4-point response scale (e.g., not at all to much more than usual). Higher scores on the GHQ reflect greater levels of psychological distress. In the present study, Cronbach alphas for the GHQ-28 was 0,82.

Although, depression is one of the components of GHQ-28; Because of its importance in health and welfare of individuals; it is necessary that depression be considered with more specialized tools.

The assessment of depression was performed by Beck Inventory (BDI). Originally introduced by Aaron T. Beck and colleagues in the early 1960s; is perhaps the best known and the most widely used self-report measure of depression.^[13]

Over the years, the BDI has been translated into numerous languages.^[14] Persian (Farsi)-language translations of the BDI also were produced and are now commonly used in various clinical and research settings in Iran. Ghasemzadeh *et al.* examined the psychometric properties of a Persian-language version of the second edition of this instrument (BDI-II) in an Iranian college-student sample. The results support the reliability and concurrent validity of the BDI-II-Persian as a measure of depressive symptoms in nonclinical samples.^[15]

Educational intervention

Evidence based studies demonstrated that psychotherapeutic approaches, such as cognitive behavior therapy are effective treatments for depression.^[16] A brief three-session of cognitive behavior (CB) intervention was designed based on Cognitive therapy; which was aimed to inform employees about the role of their thoughts and emotions in interpretation of life events and to provide them with the skills to adjust their thoughts to assist adaptive coping.^[17]

The educational intervention was intended to enable the employees to use the CB approach, to manage their emotions in unpleasant work-related situations that are common among employees in

the Iranian industrial context. Short lectures and active participation in group discussion were the main activities in the education. The intervention was consisted of three sessions, as one session per week over 3 weeks. Each session took 75 min. Two months after the intervention was completed the questionnaires were distributed again and the data were compared with before the intervention. SPSS, version 12 was used for data analysis.

Ethical consideration

Ethics approval was obtained from the Internal Review Board of the Isfahan steel company. The participants were intimated with details of the study and were asked to read and sign a consent form, and were assured of the confidentiality. Participation to study was voluntary; participants were given the opportunity to leave the study if they become uncomfortable.

RESULTS

All employees were full-time shift men. The mean and standard deviation of age were 34.5, 4.7, respectively. The mean and standard deviation of duration of occupational career were 9.3, 3.3, respectively. Ninety-four percent of employees were married.

In terms of education status; 27.3% were Primary school, 38.6% were Secondary school, and 34.1% were Diploma and higher.

Beck's standardized questionnaire scores defined as follows: symptom-free (0-10), Borderline depression (11-15), mild depression (16-30), moderate depression (31-46), and severe depression (47-63).^[18]

Severe depression was seen in 3.4% of employees.

The prevalence of depression by type of depression and demographic variables status can be seen in [Table 1].

Table 1 shows the (BDI-II) scores by employees demographic status; chi square test revealed that there were no significant different in depression level by age or marriage status or education.

According to the traditional ranking and cut point of 22 fore GHQ-28 scores; prevalence of suspected psychological disorders; was 16.9%.

To explore the impact of the intervention, paired-sample T-test in scores of depression and general health before and after intervention were

conducted. The results of paired T-test analysis can be seen in [Table 2].

There was significant strong correlation ($P \leq 0.001$) between depression scores and general health scores ($r = 0.77$).

DISCUSSION

In previous studies, depression were ranked as one of the top 5 presenting problems of employees.^[6] Since temporary employees make up substantial percent of workforce; this study pays attention to mental health and depression in temporary employees.

The results revealed that 50.3% of subjects did not had symptoms of depression, while 3.4% had severe depression these results were similar to those of Korean working condition survey (2006) which revealed the incidence of work-related depression in Korean workers aged 15-64 years were 3.5%.^[19] Also in the study published by Allen *et al.* (2010) 15.7% of employees exhibited mild depression, 4.28% recorded moderate depression, 2.64% to severe depression.^[4]

These findings are also similar to those of Dehghani *et al.* (2009) which indicated that 41.2% of nurses were normal and the others suffered from mild (42.4%), moderate (13.8%) and severe depression (2.6%).^[20] These results, however, were different from a study, which was performed on drivers in yard, the results showed that 14.8% had severe depression, 25.4% had moderate depression and 30.1% had mild depression.^[21] The disagreement may be contributed to different sample size, motivation of subjects to response, and driver's lifestyle.

Results of general health in employees indicated that the prevalence of suspected psychological disorders, according to the traditional ranking and cut point of 22, was 16.9%. These findings are similar to those of among fire department employees (15.2% were suspected psychological disorders)^[22] and those of among Isfahan Oil Refining company staff (20% were suspected psychological disorders).^[23]

These results, however, were different from those of among employees of a hospital complex (53.3% were suspected psychological disorders)^[24] also

Table 1: Prevalence of depression by type of depression and demographic variables in temporary employees

	Depression level								Total	P value
	Normal		Mild		Moderate		Severe			
	n	%	n	%	n	%	n	%		
Age										
24-29	15	75%	1	5%	3	15%	1	5%	20	
30-35	21	67.7%	5	16.1%	5	16.1%	0	0	31	
35≤	28	73.7%	4	10.5%	4	10.5%	2	5.3%	38	.594
Education										
Primary school	16	66.7%	5	20.8%	3	12.5%	0	0	24	
Secondary school	26	76.5%	1	2.9%	5	14.7%	2	5.9%	34	
Diploma and higher	21	70%	4	13.3%	4	13.3%	1	3.3%	30	.318
Marital status										
Married	5	100	0	0	0	0	0	0	5	
Single	59	70.2%	10	11.9%	12	14.3%	3	3.6%	84	.332

Table 2: Comparison of mean scores on the Beck Depression Inventory (BDI-II) and General Health (GHQ-28) in temporary employees before and after educational intervention

variables	Before the intervention N = 89		After the intervention N = 75		95% confidence interval of the difference		P value
	Mean	SD	Mean	SD	Lower	Upper	
(BDI) scores	11.4	9.03	6.73	8.2	3.21	6.94	≤0.001
GHQ-28	15.1	11.1	12.4	8.89	.97	5.03	≤0.01

were dissimilar to those of among driver (31.7% were suspected psychological disorders).^[25]

As mentioned above; these dissimilarities may be contributed to different sample size, motivation of subjects to response, and different work conditions throughout organizations.

Cognitive-behavior therapy (CBT) as a broad approach to psychotherapy has become the most widely utilized and researched of all psychotherapeutic methods.^[26]

This study applied a brief cognitive behavior educational intervention and provided temporary employees with the skills to adjust their thoughts to assist adaptive coping to manage their emotions in unpleasant work-related situations that are common among employees in the Iranian industrial context. Our findings indicate that after educational intervention depression scores significantly decrease (CI: 3.21-6.94) and general health scores also significantly decreased (CI: .97-5.03) at one month in temporary employees in Isfahan steel company. These findings were similar to those of Sharif *et al.* which examined the effectiveness of group reminiscence therapy on depression symptoms. Mean depression scores decreased significantly from 8.18 (SD 1.20) before the intervention to 6.73 (SD 1.20) immediately after it and 7.55 (SD 1.19) 1 month after the intervention.^[27] These findings add to a great body of literature indicating that cognitive behavior educational intervention is an effective tool to promote employees mental health in workplace^[28-30] as well as in patients.^[31] It is increasingly argued that the use of the workplace as a suitable place for the administration of interventions designed to prevent, screen for, or treat depression among employee populations.^[28] There is no doubt that in developing country such as Iran the resources are scarce, thus there is an urgent need for more effective and affordable interventions. Cognitive behavior educational intervention applied in this study was brief and effectively improves depression and mental health in employees therefore, can be considered as a preliminary education for employees to develop skills to cope with depression, which can be included in a more extensive education to attain longer-term results.

The most important limitation of the present study was that no waitlist comparison group was included; thereby attribution of the observed

changes to the interventions firmly was impossible. Also, only self-reported measures were used to measure depression and general health. Another limitation is that the present study did not follow up, hence the stability of educational intervention is doubtful, as well as the study included a relatively few sample size.

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