Original Article

Frequency of Psychological Disorders and their Related Factors among Granite Industry Employees in Kashan

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Abstract

Aims: Psychological stress at workplace plays an important role in employees' well-being and performance. The prevalence of suspected employees suffering from psychological stress and factors influencing it was studied at a major regional manufacturer of tiles in Kashan, Central Iran, where employees often struggled with the harsh working conditions. **Materials and Methods:** This cross-sectional study was conducted on all 263 male employees of a major regional manufacturer of tiles in Kashan using both General Health Questionnaire-28 and demographic questionnaires. SPSS software (version 16) was used to analyze the data corresponding to descriptive and analytical statistic tests. **Results:** The frequencies of mental disorder, sleep disorder and anxiety, social function disorder, as well as depression and physical symptoms were found to be 52.3%, 52.8%, 75.7%, 12.8%, and 48.3%, respectively. There was a significant relationship between anxiety with work tenure and work shift, depression with income level, and general mental health with work shift and income. **Conclusion:** The results show that psychiatric disorders in this industry are significant, so implementation of prevention and treatment programs is of great importance for improving production and performance of workers, especially in high-risk groups.

Keywords: General Health Questionnaire-28, granite, Kashan, mental health, workers

Introduction

Today, with the growth of population and urbanization as well as the global industrialization, mental illnesses have been the leading cause of disability and premature deaths, and the high prevalence of these diseases and their associated chronic disability have caused these problems in all societies to be considered as a health priority.[1] Mental disorder is a behavioral and psychological pattern that occurs with a disturbance in an individual's functioning.[2,3] This disorder leads to the suffering and limitations for the individual forcing them to suffer discrimination in their social and professional activities due to mental illness; on the other hand, their impacts on society due to their care and physical support and reduced productivity are crucial.[4] Today, among the physical and mental illnesses, depression is one of the major medical and social issues.[5] In spite of technological advances, disorders such as depression, anxiety, and stress are common diseases of the century.[6] Depression and anxiety, with a prevalence rate of 10%–20% per year in the general population, are the most common psychiatric disorders and they are more prevalent in people with stressful occupations.[7] The job of a person is considered as a constituent of social identity, source of supply for the needs of life, and developing social relationships. Excessive work-related mental pressure can endanger one's health by causing physical, psychological, and behavioral complications. In addition, these pressures can reduce the quality of individual work. Therefore, it is necessary to pay more attention to mental

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health in industrial organizations.[8] During the recent few decades, mental health has been considered as one of the most important aspects of health. Abdolmalki *et al*.'s study showed that 14.28% of the tin workers in a car-making industry of Tehran were suspected of having a mental disorder.[9] Another study by Zamanian *et al*. showed that 78.2% of the employed workers at the Shiraz Gas Power Plant who were dealing with the magnetic field and the noise were susceptible to mental disorders.[10] Cohidon *et al*. conducted a study in Toulouse, France, in 2003, on 3006 people, and reported that 47% of the people were suspected of having mental disorders.[11] With the development of industries and the increasing need in life for people working in this sector, stress, anxiety, and other issues related to mental health are increasing.[12] Therefore, a study on the incidence and prevalence as well as factors causing mental disorders can provide valuable information about educational planning, treatment and prevention of mental disorders, and promotion of the level of mental health of the community. Since having mentally healthy workers enhances productivity, we have tried to take an effective step toward preventing or reducing worker's occupational function and their productivity.

Materials and Methods

This is a cross-sectional study, and all persons working in the granite industry were surveyed. In this study, two questionnaires were used: (a) a researcher-made questionnaire was used to collect demographic characteristics such as gender, marital status, and age and (b) 28-item General Health Questionnaire containing four physical symptoms such as anxiety, insomnia, social dysfunction, and depressive. This questionnaire was first provided by Goldberg. The Likert scale of this tool and the grading of each question were defined as four points (0–4) so that a lower score indicated a higher level of general health; therefore, each individual score ranged within 0–84. Individuals with a score of 23 and below were considered healthy and those with a score of 24 and above were suspected of having the disorder. In four subscales of general health, the cutoff score 6 was considered, it means that individuals with a score of 6 and below on each scale were considered to be healthy and those with a score above 6 were suspected of having that subscale. At each subscale, the minimum and maximum scores were 0 and 21, respectively. Its reliability and validity were proved in the study of Taghavi.[13] Finally, after data collection, all data were entered into SPSS ver 16 (SPSS Co, Chicago, ILL, USA), and descriptive statistics, Chi-square test, and Fisher's exact test were used for the data analysis. Given that the mental status profile was needed for future decision-making, no sample exit criteria were considered.

This research was approved by the Ethics Committee of Kashan University of Medical Science (ethical code: IR.kaums.NUHEPM. REC.1397.001).

Results

The study involved 263 people and all of them were male. According to the results, the highest number of workers was in the subpacking sector (22.8%) and the lowest number was in procurement, sales and planning (1.52%). In addition, 7.6%–5.32% were employed in the parts of warehousing, quality control, finance and administration, services, and baking furnaces and 11.02%–11.4% in the body manufacturing and materials preparation sectors. The highest prevalence of the mental disorder among granite workers was related to social dysfunction (75.7%), the lowest prevalence of depression (12.9%), and anxiety and physical symptoms score, respectively, 52.9% and 48.3%. In addition, the general health score was 46.8% [Graph 1].

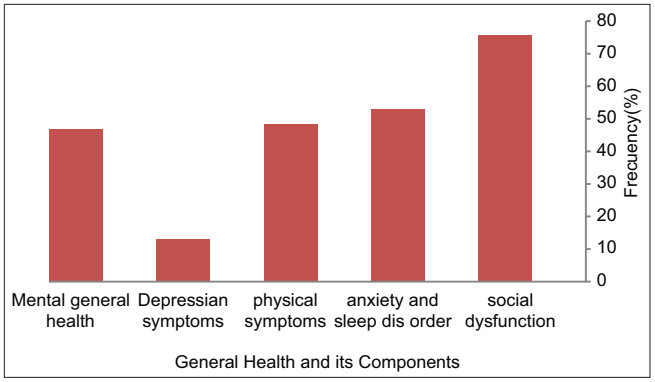
The results indicated a significant relationship between job tenure with the components of physical disorder and social dysfunction, but there was no significant relationship between work experience with anxiety ($P = 0.12$) and depression ($P = 0.35$). Physical disorders among workers with more than 10 years of tenure were more frequent. In addition, workers in the morning shift had higher levels of anxiety than others. This relationship was also statistically significant ($P < 0.001$). The results showed that depression was higher among workers with an income <29 dollar ($P < 0.05$).

There was a significant relationship between the shift work and income of employees with their general mental health ($P < 0.05$). In addition, mental illness was more common in workers in the morning shift or with the income <29 dollar [Table 1].

Discussion

The results of this study reported the prevalence of mental disorders 53.2%, which was less than the results of Zamanian *et al*. (78.2%)[10] and more than the results of Bayanzadeh *et al* and Khandan *et al*. (49.62%).[12,14] These differences can be due to different sample sizes, different frequencies of psychological symptoms in different industries, and the presence of factors affecting mental disorders such as noise.[10]

The prevalence of mental disorders in granite workers is higher than in other studies. These disorders were reported to be 29% in Kashan,[15] Tehran – 26.4%,[16] Kurdistan – 18.33%,[17] Kermanshah – 15.25%,[18] Chaharmahal



Graph 1: Frequency distribution of general health scores and its components among granite industry employees in Kashan

Table 1: Frequency distribution mental health status and demographic information among granite industry employees in Kashan

Demographic and organizational characteristics	Mental public health	
	Healthy	Unhealthy
Age (years)		
<39	73 (47.4)	81 (52.6)
>40	50 (45.9)	59 (54.1)
P	0.8	
BMI (kg.m^2)		
<18.5	2 (33.3)	4 (66.7)
18.5-24.99	72 (45.6)	86 (54.4)
>25	49 (49.5)	50 (50.5)
P	0.69	
Marital status		
Single	8 (44.4)	10 (55.6)
Married	115 (46.9)	130 (53.1)
P	0.83	
Job tenure		
<9	91 (45)	111 (55)
>10	32 (52.5)	29 (47.5)
P	0.3	
Shift work		
Morning	54 (43.2)	71 (56.8)
Afternoon	30 (40)	45 (60)
Night	39 (61.9)	24 (38.1)
P	0.02	
Education		
High school degree	16 (39)	25 (61)
Diploma	69 (47.3)	77 (52.7)
Associate's degree	22 (47.8)	24 (52.2)
BSc and above	16 (53.3)	14 (46.7)
P	0.67	
Income (dollar)		
<29	51 (39.2)	79 (60.8)
>30	72 (54.1)	61 (45.9)
P	0.015	

BMI: Body mass index

and Bakhtiari – 16.42%,[19] Lorestan – 19/05%,[20] and Qazvin – 31.6%.[21] While statistics in this industry were much more. This difference can be because of the social and economic condition of workers, age difference between them, data collection tools, the unwillingness of many people to express explicitly the psychological problems, and different jobs in studies. In the present study, there was no significant relationship between mental disorders and age, which is similar to the findings of Zahir al-Din *et al*. and Khandan *et al*.,[12,22] but it contradicts the results by Palahang *et al*. and Hashemi Nazari *et al*.[23,24] There was also a significant relationship between job tenure with the two subscales of physical disorder and social dysfunction, which is similar to other studies.[13,23,25,26] Nevertheless, there was no relationship between job tenure and the frequency of mental disorders ($P > 0.05$). Studies results of Hashemi Nazari, Zahir al-Din and Khandan was similar to this study results[13,22,23] and in the study of Daneshmandi *et al*. reported that with increased job tenure, public health was increased. In this study, unlike the study of Daneshmandi *et al*., there was no significant relationship between body mass index and general mental health.[27] The results in terms of marital status showed that married people had better mental health and more social support, but the difference was not statistically significant, and this result was similar to the result reported by Hajabi *et al*. and Hashemi Nazar *et al*.[23,28] However, it contrasted the results of the Yaghubi *et al*., and Palahang *et al*.[24,29] There was no significant relationship between education level with physical disorder, stress with anxiety, and depression with social dysfunction, and this result is similar to the results of the Zamani *et al*.[10] This study showed that work shifts are linked with stress and anxiety which is similar to the results of Khoshakhlagh and *et al*.,[30] and there was a significant relationship between income and job tenure with mental disorders. This was similar to the results of the Harman study.[31] In the morning shift, the prevalence of mental disorders was higher than in other shifts. The disruption of the circadian rhythm in shift workers may impair the secretion of enzymes which is leading to stress among shift workers; especially at night, they are more likely to have psychological problems, it was possibly due to lower rest time and higher occupational stress.[32] In this study, social dysfunction had the highest frequency and depression had the lowest frequency, which is consistent with the previous research.[13,24,25] Due to the type and nature of work, industrial jobs put too much stress on employees that can endanger their mental health. Suggestions based on the results of this study to prevent mental disorders include:

1. Entry level examinations of mental health workers should be done more precisely and the job of each person should be proportionate to the ability of the individual

2. Employees' job opportunities should be increased in line with the skills of individuals and depending on their responsibilities, and conditions should be provided to increase employee motivation at work.

Limitations

One of the limitations of this study was that some workers may not have answered the questions honestly, which is very important in understanding people's mental disorders. Future studies should be conducted using an interview with a psychologist.

Conclusion

Overall, the results showed that the prevalence of mental disorders in the industry was 53/2% including anxiety and sleepiness 52/8%, social dysfunction 75/5%, depressive symptoms 12/8%, and physical symptoms 48/3%. There was also a significant relationship between anxiety with work tenure and work shift, depression with income, and general mental health with work shift and income. Therefore, the implementation of prevention and treatment programs for mental disorders in this industry is important to enhance the

production and improve the performance of workers, especially in high-risk groups.

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Conflicts of interest

There are no conflicts of interest.

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