Family and health

Prevalence of mental disorders in employees of Khorasan Petrochemical Company in 2019

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Abstract

Introduction: The mental health of the employees of the petrochemical company is of special importance due to their nature and job sensitivity. The aim of this study is to determine the prevalence of mental disorders in employees of Khorasan Petrochemical Company in 2019.

Methods: The method of the present study is descriptive and screening in terms of purpose. The statistical population of the present study was all employees of Khorasan Petrochemical Company in 2019, ie 2000 people، which was determined by the relative class method according to the job category and relative to the statistical population and using the Cochran's formula، the sample size was 254 people. The Minnesota Multidimensional Personality Questionnaire (MMPI) was used to collect data and the data were analyzed using SPSS-24 software.

Results: The results showed that the total prevalence of disorders is 43.3% and most employees have self-morbidity (15.7%)، depression (15.00%) and schizoid (16.5%). Also، a higher percentage of employees are exposed to autism (26.8%)، depression (23.6%) and schizoid (27.2%). There was also a significant difference between men and women in terms of morbidity، mild mania and masculine and feminine characteristics. There was a significant difference in self-morbidity and depression disorders based on the level of education of employees. But there was no difference between employees in the prevalence of mental disorders according to the type of contract، work experience، age group and marital status.

Conclusion: Considering the prevalence of mental disorders in petrochemical company employees، their importance and job sensitivity and also the difference between the results between various epidemiological studies، conducting consistent research in the same way in other

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petrochemical companies and periodic examinations to control employees' mental health. It seems necessary.

Keywords: Employees of the petrochemical company, Mental disorders, Mental health,

Introduction:

Working people spend more than half of their lives in the workplace, and the dynamism and growth of any organization requires healthy and efficient human resources. Occupational stress in today's expanding world is considered an important risk factor in causing physical and mental diseases (1). Research shows that work environments and job stress can cause mental illness in employees or accelerate the process of developing the disease. After experiencing occupational stress, a person becomes mentally ill and disabled (2). Studies have identified a high level of stress for industrial jobs, in other words, occupational stress is more frequent and intense in industrial environments (3).

According to the report of the World Health Organization, during the next two decades, we will see major changes in the field of epidemiology of diseases and health needs of people, so that mental diseases, including stress related to mental disorders, will be the second cause of disabilities by 2020 (4). It is also predicted that in 2020, the share of mental disorders in the world will increase by 50% from the total share of diseases and reach 15% of the total share of diseases from the current 10.5% (5).

Epidemiology of mental disorders is a branch of research in behavioral sciences that studies the distribution of diseases in society. Mental disorder or mental illness is a behavioral and cognitive pattern that occurs in a person and is accompanied by disturbances in functioning caused by a social, psychological, genetic, physical or chemical biological disorder. Mental disorder is measured in terms of shunt deviation from the normal range (6), these changes are not in the range of the society's norm and are clearly abnormal, pathological, persistent or recurrent (7).

Although many mental problems are known in the world today, due to the variety of screening and diagnostic tools, interview techniques and differences in the sampling method and different classifications used, the amount of mental problems are highly variable and estimated differently (8). According to the statistics of the World Health Organization in 2008, the prevalence of mental disorders in 14 countries of the world ranged from 4.3% in Shanghai, China to 26.4% in the United States of America. According to the opinion of experts of the World Health Organization (8), of the ten diseases that cause the most disability in the world, five of them are related to mental diseases (major depression, drug abuse, alcohol, bipolar mood disorder, schizophrenia, and obsessive-compulsive disorder). Based on the predictions of international researchers (4),

depression, accidents and disasters, effects of war, violence and self-harm from 1990 to 2020, from fourth to second, ninth to third, sixteenth to eighth, nineteenth to twelfth, and seventeenth to fourteenth, respectively. It moves. In the latest forecast of WHO (8), the burden of depression disorder from 2002 to 2030 will rise from the fourth place to the first place in developed countries and from the fourth place to the second place in developing countries.

A 2005 review shows that 27% of adults in European countries have had at least one mental disorder in a 12-month period. The important role of mental health in the performance of industrial forces, especially in the oil and gas and petrochemical industries, is increasingly being recognized (6). The results of various researches have shown that the employees of industrial companies are not immune from suffering from mental disorders. For example, in a research, Pereghi, Amiri, and Nouri (9) investigated the relationship between health, stress and attitude towards work and the financial status of people in accepting middle jobs among retired people according to the variables of age and education. The study sample was 404 retirees of industrial factories in Isfahan and the study tool was a questionnaire. The results showed that people with younger age and higher education are better predictors of mental health.

Carlton et al. (10) investigated 5,813 people in a study titled "Symptoms of mental disorders in public security workers". The results showed that 15.1 to 26.7 percent of employees had symptoms of mental disorders depending on the workplace. In a research, Lal and Tarian (11) discussed the prevalence and role of emptiness, spiritual beliefs, job satisfaction, coping and mental health in medical centers. The study sample was 345 people, and the results of the GHQ test indicated a 21% rate of disease and the existence of a relationship between stress and emotional exhaustion and depersonalization. In a research, Rakesh Chander et al. (12) determined the prevalence and factors related to somatic disorders in health centers. The research sample was 422 people with an average age of 40.5 years using systematic random sampling. The prevalence of somatic disorder was 5%; Therefore, the factors that threaten mental health in the forces of industrial companies, which are related to their job status (9) as well as the nature and sensitivity of their jobs, make it very important to check and ensure mental health in this group. On the other hand, considering the very different estimates of the prevalence of mental disorders and the important role of mental health in the performance of industrial forces, especially the forces of oil and gas and petrochemical companies, the present research was conducted with the aim of collecting basic information in order to plan carefully for the provision of mental health services in industrial organizations.

Method:

The method of the present research is descriptive and in terms of the purpose of the screening type. The statistical population of the present study was all the employees of Khorasan Petrochemical Company in 2019, i.e. 2000 people, which was determined by stratified method according to the occupational category and according to the statistical population and using Cochran's formula, the sample size was 254 people. The data collection tool was a questionnaire method using Meine

Suta Multifaceted Personality Questionnaire (MMPI). Woles and Dahlström's research, which is also published in a collection, indicates that the MMPI has been able to stimulate scientific research more than any questionnaire used in hospitals, clinics and mental health centers. From 1940 to 1954, as many as 689 research articles have been published that show the significant value of this questionnaire in personality diagnosis and evaluation. In order to analyze the research data at the descriptive level, mean, standard deviation, skewness and kurtosis, percentage and frequency, and at the inferential level, chi-square tests were used using SPSS software.

Meine Suta Multidimensional Personality Inventory (MMPI): The Minnesota Multidimensional Personality Inventory (MMPI) was first developed and developed in 1943 by Hathaway and McKean Lee at the University of Minnesota and it has been in use for nearly 5 decades. America was revised under the leadership of James Butcher and became known as 2-MMPI. 2- MMPI has been preliminarily standardized by Mutabi in collaboration with Dr. Mohammad Naghi Brahni and colleagues for the first time on a group of the general population of Tehran (13). This test is for calling a wide range of self-descriptive characteristics and scoring them, which gives a quantitative index of a person's emotional compatibility and his attitude towards participating in the test, and is one of the most widely used clinical personality questionnaires, and more than 8000 research sources about it It's been published. The content of most of the 2-MMPI questions is relatively obvious and mainly related to symptoms of psychiatric, psychological, neurological or physical illness. This test includes 3 narrative scales and 10 clinical scales. The degree of elevation for each of the narrative and clinical scales is T = 65, which is higher than the range of clinical diagnosis scores. Although the scales were originally designed to distinguish between normal and abnormal behavior, it is more useful to consider that the scales represent categories of personality variables. Measuring adult patients in the course of psychiatric treatments and obtaining an objective method to estimate the change resulting from psychotherapy or other variables in the patient's life can be another goal of this test.

Results:

In this part, the frequency distribution of sample people according to gender, age, marital status, type of contract, work experience is presented. In the following, prevalence is shown based on frequency and percentage statistics, average and standard deviation in each variable.

Table 1: Frequency and percentage of employees according to gender

Variable	Subscale	Abundance	Percentage
Gender	Man	176	69/3
	Woman	78	30/7
	Total	254	100
marital status	Single	30	11/8
	married	224	88/2
	Total	254	100
Age	23-28	12	7/4

	29-34	32	12/6
	35-40	80	31/5
	41-46	65	25/6
	47 and up	65	25/6
	Total	254	100
work history	1-5	34	13/4
	6-10	40	15/7
	11-15	75	29/5
	16-20	51	20/1
	21-25	23	9/1
	26 and up	31	12/2
	Total	254	100
Education degree	Diploma	67	26/4
	post-diploma	30	11/8
	Bachelor's degree	128	50/4
	Master's degree	28	11/0
	P.H.D	1	0/4
	Total	254	100
contract type	contractual	110	43/3
	Official	144	56/7
	Total	254	100

Table 2: Descriptive statistics of research variables

Variable	Average	Standard deviation
Self-disease	63/96	10/04
depression	63/49	11/15
hysteria	57/30	11/39
Masculine and feminine features	52/81	10/49
	57/51	14/32
paranoia	58/25	14/76
Mental fatigue	64/39	13/39
schizoid	54/22	11/42
Mild mania	55/54	10/85
psychopathy	52/59	9/62
Social introversion	61/44	8/83
Lying	62/69	12/40
infrequency correction	50/25	8/90

According to the values in Table 2, it can be seen that the largest average was related to schizoid (64.39) and the smallest average was related to correction. Graph 1 also shows the general profile of the employees.

Table 3: Prevalence rate of mental disorders in the employees of Khorasan Petrochemical Company

state of disorder	Variable	Abundance	Percentage
no disruption		146	57/5
subject to disruption	Self-disease	68	26/8
having a disorder		40	15/7
no disruption		156	61/4
subject to disruption	depression	60	6/23
having a disorder		38	15
no disruption		197	77/6
subject to disruption	hysteria	41	16/1
having a disorder		16	6/3
no disruption		223	87/8
subject to disruption	Masculine and feminine features	24	9/4
having a disorder		7	2/8
no disruption		179	70/5
subject to disruption	paranoia	54	21/3
having a disorder		21	8/2
no disruption		175	68/9
subject to disruption	Mental fatigue	53	20/9
having a disorder		26	10/2
no disruption		143	56/3
subject to disruption	schizoid	69	27/2
having a disorder		42	16/5
no disruption		219	86/2
subject to disruption	Mild mania	26	10/3
having a disorder		9	3/5
no disruption	psychopathy	213	83/9

subject to disruption			26	10/2
having a disorder			15	5/9
no disruption			236	92/9
subject to disruption	Social introversion		13	5/1
having a disorder			5	2
no disruption			48	18/9
subject to disruption	Psychological profile		171	67/3
having a disorder			110	43/3

According to the values in Table 3, it can be seen that a higher percentage of employees have self-diagnosis disorder (15.7%), depression (15.00%) and schizoid (16.5%). Also, a higher percentage of employees are exposed to self-diagnosis disorder (26.8%), depression (23.6%), and schizoid (27.2%), so more employees are exposed to or have self-diagnosis, depression, and schizoid disorders. Finally, a total of 43.3 percent of employees had at least one disorder. The chi-square value obtained from the comparison of the frequencies of two gender groups in the three categories of the disorder status variable in the self-diagnosis variable ($p<0.05$; $\chi2 = 15.50$) and male and female characteristics ($p<0.05$; $\chi2 = 42.97$) It is possible that this amount is statistically significant; Therefore, the two studied groups are significantly different from each other in terms of the state of the disorder. Comparison of the frequencies of men and women shows that men have a higher percentage of self-diagnosing disorders and women have a higher percentage of self-diagnosing disorders. Also, in the variable of male and female characteristics, a higher percentage of women are prone to or have a disorder and a higher percentage of men without They are a disorder. Level The chi-square obtained from the comparison of the frequencies of two groups in the three categories of the disorder status variable is depression ($p>0.05$; $\chi2 = 2.26$) and hysteria ($p>0.05$; $\chi2 = 0.048$). It is not statistically significant; Therefore, there was no difference between men and women in depressive and hysteria disorders. The chi-square value obtained from the comparison of the frequencies of two groups in the three categories of the disorder status variable in the paranoia variable ($p>0.05$; $\chi2 = 3.14$); mental fatigue ($p>0.02$; $\chi2=0.33$) and schizoid ($p>0.05$; $\chi2=0.004$), which was not statistically significant; Therefore, there was no difference between men and women in paranoia, mental fatigue and schizoid disorders. The chi-square value obtained from the comparison of the frequencies of the two groups in the three categories of the disorder status variable is mild mania ($p<0.05$; $\chi2 = 8.55$), which is statistically significant; Therefore, the two studied groups are significantly different from each other in terms of the state of the disorder. The comparison of the frequencies of men and women shows that women have a higher percentage of disorders, as well as the chi-square obtained from the comparison of the frequencies of the two groups in the three categories of the disorder status variable in the variable of psychopathy ($p>0.05$; $\chi2 = 0.91$) and introversion social ($p>0.05$; $\chi2 = 1.68$), which is not statistically significant;

Therefore, there is no difference between women and men in psychopathic disorders and social introversion. The chi-square value obtained from the comparison of the frequencies of education level in three categories of the disorder status variable is in self-diagnosis variable ($p<0.05$; $\chi2 = 18.78$) and depression ($p<0.05$; $\chi2 = 27.28$). It is statistically significant; Therefore, the two studied groups are significantly different from each other in terms of self-diagnosis and depression. The comparison of frequencies shows that bachelor and master's employees have a higher percentage without self-diagnostic disorder, also in the depression variable, bachelor's and master's students have a higher percentage without disorder, and postgraduate students have a higher percentage without disorder and then with disorder. The chi-square obtained from the comparison of the frequencies of 5 groups in the three categories of the disorder status variable in the variable of male and female characteristics ($p>0.05$; $\chi2 = 4.38$) is hysteria ($p>0.05$; $\chi2 = 11.22$) which This amount is not statistically significant; Therefore, based on the level of education of the employees, there is no difference in disorders of male and female characteristics and hysteria. The chi-square value obtained from the comparison of the frequencies of the education level in the three categories of the disorder status variable in the paranoia variable ($p>0.05$; $\chi2 = 13.29$); mental fatigue ($p>0.05$; $\chi2 = 13.47$) and schizoid ($p>0.05$; $\chi2 = 13.04$), which is not statistically significant; Therefore, there is no difference between employees based on the level of education in paranoia, mental fatigue and schizoid disorders. Also, the chi-square obtained from the comparison of the frequencies of education level in three categories of disorder status variable in mild mania ($p>0.05$; $\chi2 = 6.28$), psychopathy ($p>0.05$; $\chi2 = 9.92$) and introversion social ($p>0.05$; $\chi2 = 5.34$), which is not statistically significant; Therefore, there was no difference between people with different levels of education in mild manic disorders, psychopathy and social introversion.

Discussion and conclusion:

The aim of the present study was to investigate the mental health of employees of Khorasan Petrochemical Company. For this purpose, 254 people were sampled using the Cochran formula and answered the MMPI-2 questionnaire using the stratified method. The findings showed that the prevalence of total disorders is 43.3% and employees are more prone to disorders or have self-diagnosis, depression and schizoid disorders. Also, there were significant differences between men and women in terms of self-diagnostic disorders, mild mania, and male and female characteristics, and there was a significant difference in self-diagnostic disorders and depression based on the level of education of the employees. However, there was no difference between the employees in the prevalence of mental disorders according to the type of contract, work experience, age group and their marital status. Carlton et al. (10) in a study titled "Symptoms of mental disorders in public security employees" found that 15.1% to 26.7% of employees had symptoms of mental disorders depending on the workplace, which was significantly different from the findings of this study. Lal and Tarian (11) also studied the prevalence and role of emptiness, spiritual beliefs, job satisfaction, coping and mental health in medical centers. The results of the GHQ test indicated a 21% rate of disorder and the existence of a relationship between stress and emotional exhaustion and depersonalization. Was. In another study, Rakesh Chander et al. (12) determined the prevalence

and factors related to somatic disorders in health centers, where the prevalence of somatic disorder was 5%. The difference obtained in the results and the higher prevalence of disorders in Khorasan Petrochemical Company can be due to the difficult job context in the oil industry compared to the health centers in Chander et al.'s research (12). Other environmental pressures, such as sanctions, have caused a significant decrease in product sales in this industry in the last few years, which inevitably has an impact on the reduction of rewards and various facilities that the organization can provide to its employees. Such issues will increase the psychological pressure in the employees of these industries, either as an external factor (reduction of receipts) or as a mental factor. In fact, it seems that the employees of the oil refining industry in Iran are significantly different from the employees of the same industry in other countries. Another important point that can influence more cases is family pressure and family-work conflicts caused by it due to the distance of employees from their place of residence. The high prevalence of schizoid in the psychological profile of employees (16.5%) can also be related to this factor. The distance between the place of residence and the place of work has always been the focus of researchers as a factor of psychological pressure. In this research, considering that the employees of this industry often live in another city, apart from work issues, they also face another issue, which in the process of many years of employment can play a role as a stressor and according to the Lazarus model, lead to the actualization of mental syndromes. Another explanation that can justify the double infection rate of Iranian employees is that the questionnaires of this research were distributed in the conditions of the Corona epidemic, which seems to be effective in the occurrence of more symptoms of mental disorders. The crisis caused by the corona virus in the whole world, including Iran and its industries, seems to have put more psychological pressure on the employees, such pressure is unprecedented. The manifestation of this pressure can be seen in the high prevalence of self-diagnosis (15.7 percent) among employees. Self-diagnosis is usually the result of a person's severe anxiety. Anxiety causes self-diagnosis and is caused by misinterpretation of physical symptoms and related information (14). The main feature of self-diagnosis is a clinical picture, the prominent disorder of which is the unrealistic interpretation of physical symptoms and natural sensations as abnormal symptoms, which leads to mental preoccupation or belief in the fear of a severe illness (15). Self-diagnosis is a type of mental disorder that is characterized by a person's belief in the existence of a serious illness in himself and concern about it, despite having physical health. According to the theory of psychoanalysis, this disorder is another form of other mental disorders and is mostly related to depression and anxiety disorders (16).

According to the findings, there was no significant difference between men and women in the overall prevalence of disorders (except self-diagnosis and hypomania). According to Bam's theory of gender schemas, the presence of high levels of traits of both sexes in a person creates the most adaptive and compatible gender characteristic. People who can be very kind at the right time and at the right time are the people who make decisions easily and without hesitation, benefit from better mental well-being and can deal with the psychological pressures of life in a more appropriate way. Shimonaka et al. (17) conducted a study in Japan and the results of this study showed that bisexual men and women are in the best condition in terms of mental health, and monogamous

men are at the lowest or worst level of mental health; Therefore, it is possible that most women working in industrial jobs have masculine schemas, which makes there is no significant difference in the prevalence of disorders in women and men. Also, according to Agnew's general pressure theory, women and men working in the workplace experience almost the same general pressures, and for this reason, the prevalence of mental disorders in them may be the same and not different. According to the findings, there was a significant difference between different educations in the prevalence of self-diagnosis. This finding is in line with the research of Parhehi et al. (9) which showed that people with higher education have; They have more mental health. According to the existential theory, people who know more about themselves will have fewer problems, for this reason it is possible that people who have higher education have better and more knowledge about themselves, and if they have a problem, they have enough insight into it and look for a solution. They overcome that problem, as a result, they have better mental health, and they also have higher expectations of themselves for progress and consider self-knowledge essential for progress. The current research was conducted on the employees of Khorasan Petrochemical Company, so caution should be observed in generalizing the results to other employees and cities. Not considering cultural and ethnic differences in this research can be another limitation; Therefore, it is suggested to conduct similar researches in other populations and in different cities and industries to generalize the research results.

One of the limitations of the present research is the difficulty of coordination and negligence of people in filling out the questionnaire. Another limitation of this research is that data collection was based on a self-report scale, therefore, another limitation of this research is related to the measurement tool; Because these reports are prone to distortion due to unconscious defenses and response bias; Therefore, it is suggested that these cases be taken into account in future studies to obtain more reliable results. Considering that one of the limitations of this research is the use of self-report scales, it is suggested to use a qualitative research based on interviews in future research. According to the results of this research, it is necessary to pay attention to the psychological profile of employees and use appropriate training programs to help them and raise awareness to improve psychological problems. It should be noted that ethnic and cultural diversity should also be taken into account.

Ethical considerations

1) Obtaining consent from the samples under research;
2) giving sufficient information to each of the samples about how to conduct the study;
3) Compliance with ethical considerations in terms of the confidentiality of people's information;
4) Thanks to all the people who cooperated in the research.

Ethical approval: No cases reported by the authors.

Ethical conflict: none reported by authors.

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