

Current Situation of Anxiety Symptoms and Its Influencing Factors among 3048 Employees in Deyang City in 2022

Ruifang Xiang^{1,2}, Dan Li¹, Juan Wang¹, Xiaoqin Liu¹

¹Health Management Center, Deyang People's Hospital, Deyang, China

²School of Nursing, Southwest Medical University, Luzhou, China

Email: 592010874@qq.com

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Abstract

Objective: To understand the current situation and influencing factors of anxiety symptoms of employees in Deyang City, and provide basis for formulating psychological intervention strategies for employees. **Method:** We investigate the anxiety status of 3217 employees aged 18 - 60 who met the inclusion and exclusion criteria in a health management center in Deyang City from March to October 2022. The survey tool is the Self-Rating Anxiety Scale (SAS). Using frequency statistics, chi-square test and logistic regression to analyze the current situation and influencing factors. **Result:** 3048 valid questionnaires were collected, with an effective recovery rate of 94.75%. 471 people were judged to have anxiety symptoms, with a positive rate of 15.45%. There are statistically significant differences in the presence of anxiety symptoms among different genders, education levels, age groups, marital status, working years, income levels and positions. Among the patients with positive anxiety symptoms, the top five single symptoms were sleep (84.08%), weakness and fatigue (74.52%), feeling calm (73.89%), everything was good (70.28%), dry and warm hands and feet (64.33%). Logistic regression analysis showed that unmarried, male and high education was protective factors for anxiety. **Conclusion:** The incidence of anxiety symptoms among employees in Deyang City is higher than the national level. Divorced or widowed female employees with low educational background may be the key group to implement psychological intervention. Sleep problems can lead to anxiety, while anxiety can also lead to sleep disorders. The two interact and form a vicious circle, suggesting that improving sleep can alleviate anxiety among employees.

Keywords

Employees, Anxiety Symptom, Mental Health, Investigation, Influencing

Factors

1. Introduction

Anxiety is a complex emotional state, mainly manifested in negative emotions such as anxiety, worry, and tension. It is an emotional state generated by people about the dangers and threats they may face in the future. If anxiety is excessive, it can lead to psychological imbalances in individuals, causing damage to their physical and mental health (Liu & Qi, 2018). The psychological health level of in-service employees directly affects their work attitude and efficiency, thereby affecting the development of the enterprise. With the progress of society and technology, changes in labor, lifestyle, and labor organization processes, the pace of work and life has significantly accelerated, and occupational anxiety has become a prominent occupational health problem for employees' mental health. This study investigated the anxiety status of 3048 employees in Deyang City, and analyzed its influencing factors. It has positive significance in reducing the incidence of anxiety among employees, promoting and maintaining their mental health.

2. Object and Method

2.1. Object

An anxiety status survey was conducted among employees aged 18 - 60 who met the inclusion and exclusion criteria during a health examination conducted at a health management center in Deyang City from March to October 2022. Inclusion criteria: 1) Have basic reading comprehension skills and be able to complete the questionnaire by oneself. 2) Agree to participate in this study. All procedures met the 1964 Helsinki Declaration and its later amendments.

2.2. Method

2.2.1. Survey Tools

1) General situation questionnaire: including gender, age, educational background, marital status, income, working years, and position

2) Self-Rating Anxiety Scale, SAS (Sun, 2018): SAS was developed by Zung, which can help individuals understand their subjective feelings of anxiety and assess whether they have anxiety symptoms and the severity of anxiety symptoms. The scale includes 20 self-evaluation items, of which 15 items are positive and 5 items are negative. Each item is scored using a 1 - 4 level scoring method. The total score of 20 items is the basic score, and the basic score $\times 1.25$ is the standard score. The standard score ranges from 25 to 100 points. The higher the standard score, the more severe the anxiety tendency. The specific judgment criteria are shown in **Table 1**. The reliability and validity of the scale are good (Duan, 2012). In this study, Cronbach α is 0.93.

Table 1. SAS criteria.

Standard score	Anxiety Status
<50	No anxiety symptoms
50 - 59	Mild anxiety symptoms
60 - 69	Moderate anxiety symptoms
≥70	Severe anxiety symptoms

2.2.2. Survey Methods

The PEM psychological examination management system was used to conduct a questionnaire survey on employees participating in the survey. The respondents used computers to fill out the questionnaire separately in the compartment. Before the survey starts, professional investigators will conduct project introductions, informed consent, and unified guidelines. During the investigation process, if there are unclear questions, on-site investigators can be invited to explain them.

2.2.3. Quality Control

The investigation steps are conducted by professional investigators, who receive unified training and guidance before implementation. The survey was conducted using a computerized PEM psychological examination management system, which was completed by the respondents themselves, to avoid data distortion due to concerns about privacy disclosure. The recovered questionnaire was logically proofread by two members of the project team. Questionnaires with missing items, incorrect items, or logical errors, as well as questionnaires with a response time of less than 300 seconds, were determined as unqualified and were rejected.

2.2.4. Statistical Analysis

The data were exported from the PEM psychological examination management system and statistically analyzed using SPSS 26.0 software. The measurement data were expressed as mean \pm standard deviation ($x \pm s$), and the counting data were expressed as frequency, constituent ratio, or rate; Chi-square test was used to compare the positive rates of anxiety symptoms among groups with different characteristics; Logistic regression analysis was used to analyze the influencing factors of anxiety symptoms among respondents, with a statistically significant difference of $P < 0.05$.

3. Results

1) Basic information. In this study, a total of 3217 questionnaires were collected, and two people conducted logical proofreading to eliminate omissions, errors, and 369 questionnaires with a filling time of <300 seconds. Finally, 3048 questionnaires were effectively collected, with an effective recovery rate of 94.75%. Among them, 1962 men (64.37%) and 1086 women (35.63%); The average age

was (41.35 ± 9.84) years old; The education level is mainly undergraduate, accounting for 63.22%; The main age is 31 - 40 years old, accounting for 38.32%; The majority of employees have worked for 10 - 15 years, accounting for 22.05%; The majority of positions are staff and below, accounting for 69.19%. See **Table 2** for details.

2) Positive situation of anxiety symptoms: A total of 471 respondents had anxiety symptoms, with a positive rate of 15.45%. See **Table 3** for details. The top five single symptoms among respondents were sleep (36.09%), dry and warm hands and feet (27.72%), feeling calm and peaceful inside (24.70%), weakness and fatigue (20.77%), and everything was okay (20.37%). Among the patients with positive anxiety symptoms, the top five single symptoms were sleep (84.08%), weakness and fatigue (74.52%), feeling calm inside (73.89%), everything was okay (70.28%), and dry and warm hands and feet (64.33%). See **Table 4** for details.

3) Occurrence of anxiety symptoms among employees with different basic information: The χ^2 test results show that there are statistically significant differences in the presence or absence of anxiety symptoms among different genders, educational levels, age groups, marital status, working years, income levels, and positions. See **Table 5** for details. The positive rate of female anxiety symptoms is higher than that of male; The positive rate of anxiety symptoms in employees with college degrees is higher than that of doctoral students; The positive rate of anxiety symptoms in employees aged 41 - 50 years is higher than that in 51 - 60 years; The positive rate of anxiety symptoms in divorced or widowed employees is higher than that in unmarried employees; The positive rate of anxiety symptoms among employees who have worked for 20 - 25 years is higher than that of employees who have worked for 5 years or less; The positive rate of anxiety symptoms among employees with an income level of 3000 - 5000 yuan is higher than 10,000 - 15,000 yuan; The positive rate of anxiety symptoms in employees below the department level is higher than that above the department level.

4) Logistic regression analysis of anxiety symptoms in employees: Using whether anxiety symptoms occur as independent variables and gender, educational level, age group, marital status, working years, income level, and position as dependent variables, a logistic regression analysis was conducted. The results showed that age group, income, level, and working years did not enter the regression equation. Unmarried, male, and high educational background are protective factors for anxiety, as shown in **Table 6**.

4. Discussion

1) In this study, the self rating anxiety score of the investigated employees was 38.4 ± 10.7 , higher than the national norm (37.2 ± 12.6) (Wang & Guan, 2021), with a statistically significant difference. It indicates that employees may be prone to anxiety due to long-term frequent overload work, coupled with greater work pressure (Li et al., 2022). It is suggested that attention should be paid to the

Table 2. Demographic and occupational characteristics of respondents.

Characteristic	population	composition ratio (%)
Gender		
male	1962	64.37
female	1086	35.63
degree of education		
Junior high school and below	46	1.51
high school	55	1.80
junior college	503	16.50
undergraduate	1927	63.22
Master's degree candidate	511	16.77
PhD Candidate	6	0.20
Age		
Under 30 years of age	415	13.62
31 - 40	1168	38.32
41 - 50	760	24.93
51 - 60	705	23.13
marital status		
unmarried	354	11.61
married	2577	84.55
Other (divorced/widowed)	117	3.84
Years of service		
5 years and below	242	7.94
5 - 10 years	399	13.09
10 - 15 years	672	22.05
15 - 20 years	420	13.78
20 - 25 years	378	12.40
25 - 30 years	356	11.68
Over 30 years	581	19.06
Income level		
Up to 3000 yuan	324	10.63
3000 - 5000 yuan	1036	33.99
RMB 5000 - 10,000	1470	48.23
10,000 - 15,000 yuan	170	5.58
15,000 - 20,000 yuan	19	0.62
Above 20,000 yuan	29	0.95
Post level		
Department level and below	2109	69.19
Above department level	939	30.81

Table 3. Positive rate of anxiety symptoms.

Anxiety Status	population	composition ratio (%)
Mild anxiety symptoms	315	10.33
Moderate anxiety symptoms	119	3.90
Severe anxiety symptoms	37	1.21
Total	471	15.45

Table 4. Incidence rate of single symptom.

Questionnaire content	All respondents		Anxiety positive objects	
	population	composition ratio (%)	population	composition ratio (%)
Easy to fall asleep and sleep well*	1100	36.09	396	84.08
Feels vulnerable to weakness and fatigue	633	20.77	351	74.52
Feel calm*	753	24.7	348	73.89
Thought everything was fine*	621	20.37	331	70.28
Hands and feet are often dry and warm*	845	27.72	303	64.33
Feeling upset or frightened	316	10.37	248	52.65
Easier to be nervous or anxious than usual	321	10.53	242	51.38
Suffering from headaches, neck pain, and back pain	376	12.34	239	50.74
Feel like you're going crazy	179	5.87	158	33.55
Feel easy to exhale and inhale*	251	8.23	151	32.06
Feeling scared for no reason	144	4.72	132	28.03
Frequent urination	283	9.28	120	25.48
Suffering from stomach pain and indigestion	204	6.69	118	25.05
Distressed by dizziness	142	4.66	116	24.63
I feel my heart beating fast	137	4.49	113	23.99
Have nightmares	136	4.46	97	20.59
Have a faint attack or feel about to faint	85	2.79	81	17.2
Numbness and tingling of hands and feet	112	3.67	73	15.5
Blush and fever	116	3.81	65	13.8
Hands and feet tremble	65	2.13	51	10.83

Note: * is a reverse scoring question.

anxiety symptoms of employees, and early detection, assistance, and intervention should be achieved through regular screening.

2) The positive detection rate of anxiety symptoms among employees in this study is 15.45%, which is higher than the detection rate in the research conducted by Wang Xinye (Wang et al., 2013) and lower than the detection rate in the research conducted by Li Yatong (Li et al., 2022), indicating that the positive

Table 5. Analysis of the positive rate of anxiety symptoms among respondents with different characteristics.

Variable	Number of respondents	Anxiety positive objects	χ^2	P Value
Gender			8.091	0.004
male	1962	276 (14.07)		
female	1086	195 (17.96)		
degree of education			12.177	0.032
Junior high school and below	46	7 (15.22)		
high school	55	8 (14.55)		
junior college	503	93 (18.49)		
undergraduate	1927	306 (15.88)		
Master's degree candidate	511	57 (11.15)		
PhD Candidate	6	0 (0.00)		
Age			19.277	<0.01
Under 30 years of age	415	54 (13.01)		
31 - 40	1168	196 (16.78)		
41 - 50	760	142 (18.68)		
51 - 60	705	79 (11.21)		
marital status			11.470	0.003
unmarried	354	51 (14.41)		
married	2577	389 (15.10)		
Other (divorced/widowed)	117	31 (26.50)		
Years of service			24.781	<0.01
5 years and below	242	25 (10.33)		
5 - 10 years	399	67 (16.79)		
10 - 15 years	672	111 (16.52)		
15 - 20 years	420	81 (19.29)		
20 - 25 years	378	74 (19.58)		
25 - 30 years	356	48 (13.48)		
Over 30 years	581	65 (11.19)		
Income level			14.832	0.011
Up to 3000 yuan	324	51 (15.74)		
3000 - 5000 yuan	1036	187 (18.05)		
RMB 5000 - 10,000	1470	209 (14.22)		
10,000 - 15,000 yuan	170	15 (8.82)		
15,000 - 20,000 yuan	19	2 (10.53)		

Continued

Above 20,000 yuan	29	7 (24.14)		
Post level			9.303	0.002
Department level and below	2109	354 (16.79)		
Above department level	939	117 (12.46)		

Table 6. Logistic regression analysis of employees' anxiety.

Item	regression coefficient	Standard error	<i>z</i>	Wald χ^2	<i>p</i>	OR	OR 95% CI
age group	0.176	0.165	1.065	1.135	0.287	1.192	0.863 - 1.648
Gender	-0.322	0.104	-3.083	9.505	0.002	0.725	0.591 - 0.889
marital status	0.369	0.141	2.622	6.876	0.009	1.446	1.098 - 1.905
education	-0.191	0.082	-2.326	5.409	0.020	0.826	0.704 - 0.970
Income	-0.059	0.062	-0.953	0.909	0.340	0.943	0.835 - 1.064
Post level	-0.267	0.160	-1.671	2.791	0.095	0.766	0.560 - 1.047
Years of service	-0.131	0.083	-1.572	2.471	0.116	0.877	0.745 - 1.033

incidence of anxiety symptoms may be related to the level of regions and units.

3) Among all respondents, more than 36% reported having sleep problems, higher than the 25% reported by foreign research reports (Morin & Benca, 2012), and higher than the insomnia rate of employees in Lanzhou region of China (Xiao et al., 2022). Of the 471 people who were judged to be positive for anxiety symptoms, over 84% had sleep disorders. Sleep problems can lead to anxiety, while anxiety can also lead to sleep disorders (Buysse, 2013). The two affect each other and form a vicious circle, suggesting that anxiety can be alleviated by improving sleep conditions.

4) The results of univariate analysis showed that the positive rate of anxiety symptoms in employees below the department level is higher than that above the department level; For young employees, the positive rate of anxiety symptoms increases with the growth of their age and working years. However, when they are over 50 years old and have worked for more than 25 years, the higher the age, the lower the positive rate of anxiety, indicating that (Wang & Zhou, 2022) young employees may be more prone to anxiety emotions during the early stages of their work due to poor adaptation to professional roles, rising work levels, and starting to form new families (Pu et al., 2021), It is suggested that young employees teams should pay attention to mental health and emotional counseling, improve their comprehensive abilities and job competencies as soon as possible, and help them better adapt to their job roles.

5) Logistic regression analysis showed that the main factors affecting the positive rate of anxiety symptoms were marriage, gender, and educational back-

ground. Unmarried, male, and high educational background were protective factors for anxiety symptoms. The positive rate of anxiety symptoms in women is higher than that in male, which may be related to the fact that women are more likely to be emotional than men and that society places greater family responsibilities on women; The positive rate of anxiety symptoms in divorced or widowed employees is higher than that in unmarried or married employees, suggesting that family social support can better alleviate anxiety; The positive rate of anxiety symptoms among employees with lower education levels is higher than that of those with higher education levels, which may be due to the fact that individuals with higher education levels tend to have higher psychological resilience (Hao & Liang, 2015), When encountering stress and setbacks in work and life, there may be more channels to relieve stress and can quickly recover from negative psychological states (Peng & Hao, 2020).

5. Conclusion

The incidence of anxiety symptoms among employees in Deyang City is higher than the national level. Divorced or widowed female employees with low educational background may be the key group to implement psychological intervention. Sleep problems can lead to anxiety, while anxiety can also lead to sleep disorders. The two interact and form a vicious circle, suggesting that improving sleep can alleviate anxiety among employees.

6. Limitations and Future Directions

The survey object of this study is limited to in-service employees who undergo health examinations at a health management center in Deyang City. This population has a higher level of health concern, which may affect the incidence of anxiety symptoms. Further multicenter research can be conducted to obtain more authentic data, and solutions can be developed based on influencing factors to improve the mental health level of in-service employees.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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