

Analysis of Physical Examination Results and Health Management Recommendations for University Staff: A Case Study of an Agricultural University in Tianjin

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Abstract [Objectives] To investigate and analyze the physical examination status of the staff in an agricultural university in Tianjin, to understand the composition of the diseases suffered by the staff in the university, and to provide the basis for the formulation of health education programs and health management countermeasures. [Methods] A comprehensive physical examination survey was conducted among 377 teachers and staff in the school, and the results were statistically analyzed by SPSS 24.0. [Results] The detection rates of diseases among the staff of a university in Tianjin were 161 (42.7%) overweight and obesity, 167 (44.3%) dyslipidemia, 250 (66.31%) thyroid nodules, 214 (56.76%) fatty liver, 116 (30.77%) hyperglycemia, 96 (25.46%) hypertension, 90 cases (23.87%) had abnormal ECG, and the prevalence rate increased with age. [Conclusions] The health status of the staff in a university in Tianjin is not optimistic. They should strengthen health education and health care guidance, increase sports and physical exercise, actively do a good job in early diagnosis, treatment and prevention of diseases, and improve their health level.

Key words College and university staff, Health examination, Health management

0 Introduction

The faculty and staff of colleges and universities, as the core force of the school, shoulder the dual responsibilities of teaching and scientific research, and are the key force to promote the strategy of rejuvenating China through science and education. Ensuring the health of teaching staff is helpful to maintain the normal operation of teaching work. However, in recent years, university teachers frequently have symptoms such as syncope, sweating due to debility, palpitation and hypertension in the course of teaching. These problems are mainly related to the following factors: first, university teachers are facing tremendous work pressure; second, scientific research work is also heavy; third, unhealthy eating habits, such as irregular meals, overeating and neglecting breakfast, may lead to digestive system diseases; fourth, poor sleep quality and lack of efficient sleep. The health status of college and university teachers is directly related to their work efficiency, so we must pay attention to the health of teachers and staff, and carry out regular physical examination in order to detect and prevent and treat related diseases in time. It is very important to implement scientific and effective health management measures to improve the physical and mental health of college and university teachers. Therefore, we analyzed the physical examination results of the staff of an agricultural university in Tianjin in 2023, and came up with pertinent health management recommendations.

1 Research object and implementation process

1.1 Research object We selected 382 faculty members of University A in Tianjin for investigation, and 377 faculty members participated in the health examination in 2023. Among them, there were 202 males and 175 females, separately accounting for 53.6% and 46.4% of the total.

1.2 Diagnostic method Experts from the Physical Examination Center of Tianjin Cancer Hospital undertake the physical examination of the University A in Tianjin, including internal medicine, surgery, ophthalmology, otorhinolaryngology, stomatology and gynecology. Instrument examination: thyroid color ultrasound, type-B ultrasonic examination (liver, gallbladder, spleen, pancreas, double kidneys), gynecological ultrasound (uterus), male prostate ultrasound, etc., electrocardiogram, chest X-ray, laboratory examination of blood routine, 4 items of blood lipids, blood glucose, 8 items of liver functions, 3 items of kidney function, tumor markers (AFP), urine routine, vaginal secretions, cervical scraping examination, etc.

1.3 Diagnostic criteria

1.3.1 Diagnostic criteria of the body mass index (BMI): According to the definition of *Expert Consensus on Prevention and Treatment of Obesity among Chinese Residents* (2022), BMI < 18.5 kg/m² is emaciation, BMI 18.5–23.9 kg/m² is normal, BMI 24.0–27.9 kg/m² is overweight, and BMI ≥ 28 kg/m² is obesity^[1].

1.3.2 Diagnostic criteria for hypertension^[2]: SBP ≥ 140 mmHg, (or) DBP ≥ 90 mmHg, (or) history of hypertension, taking anti-hypertensive drugs.

1.3.3 Diagnostic criteria for dyslipidemia: total cholesterol (CHOL) > 5.20 mmol/L or triglyceride (TG) > 2.26 mmol/L or low density lipoprotein (LDL) > 3.12 mmol/L^[3].

1.3.4 Blood glucose: According to the *Guidelines for the Preven-*

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tion and Treatment of Type 2 Diabetes in China (2017 Edition), the diagnostic criteria for diabetes are fasting blood glucose (FPG) ≥ 7.0 mmol/L^[4].

1.4 Statistical methods SPSS 24.0 statistical software was used for data analysis.

2 Results and discussion

2.1 Results

2.1.1 Gender and age characteristics of participating teachers. According to the analysis of the relevant survey data of 377 respondents, 53.4% of the teachers were male and 46.4% were female. There were 31 people under 30 years old, accounting for 8.22%; 119 people between 31 and 40 years old, accounting for 31.56%; 111 people between 41 and 50 years old, accounting for 29.44%; 79 people between 51 and 60 years old, accounting for 20.95%; 37 people over 61 years old, accounting for 9.81%.

2.1.2 General condition of physical examination. Among the 377 subjects, 361 had abnormal results, and the abnormal detection rate was 95.76%. The detection rate was 94.06% in males and 97.71% in females. The diseases with higher detection rate were overweight and obesity (42.6%), dyslipidemia (44.30%), thyroid nodules (66.31%), fatty liver (56.76%), hyperglycemia (30.77%), hypertension (25.46%), and abnormal electrocardiogram (23.87%). Male prostate abnormalities accounted for 23.76% of the male respondents, while female gynecological abnormalities accounted for 25.14%.

2.1.3 Feedback of living and working conditions. Among the 377 respondents, 78 were regular smokers, 52 were occasional smokers, 247 were non-smokers, and more than 60% of the respondents did not smoke. There were 90 people who often drink, 119 people who occasionally drank, and only 167 people who did not drink, accounting for 44.3%. 322 people had high mental stress, while only 43 people had no mental stress, accounting for 11.41%. There were 78 people who often take part in physical exercise, 103 people who occasionally took part in physical exercise, 196 people who did not take part in physical exercise, more than half of the respondents did not take part in physical exercise.

2.2 Discussion In recent years, more and more attention has been paid to the health problems of university teachers. Hypertension, hyperglycemia, hyperlipidemia, thyroid nodules and other chronic diseases have become the main chronic diseases endangering the health of residents, and there is a trend of younger. Hypertension, hyperlipidemia and hyperglycemia are the main risk factors of cardiovascular and cerebrovascular diseases, which are independent and interrelated. Strictly speaking, one disease does not directly lead to another disease, but through indirect ways or indirect factors, thus forming a vicious circle. Although the morbidity mechanisms of hyperglycemia, hypertension and hyperlipidemia are different, they often have common morbidity causes. For example, eating too greasy, exercising too little and long-term emotional tension will lead to atherosclerotic plaques. The gradual accumulation of atherosclerotic plaques will cause vascular stenosis

in the heart, brain, kidney and other important parts, causing ischemia and hypoxia in the corresponding parts. If atherosclerotic plaques suddenly fall off, there will be rapid arterial occlusion, leading to myocardial infarction, cerebral infarction and other serious consequences. The results of physical examination showed that the total detection rate of hypertension in teachers and staff was 25.46%, and the prevalence of hypertension increased year by year with the increase of age. This may be related to the unhealthy lifestyle of male teachers, such as long-term smoking, drinking, eating disorders and lack of physical exercise. Hypertensive patients should pay attention to lifestyle conditioning, weight control, appropriate increase in physical exercise, do not smoke, avoid heavy drinking, reduce the intake of salt and fat, strict diet management, learn self-psychological adjustment, reduce mental stress, and maintain a good psychological state.

In this study, the total detection rate of hyperglycemia was 30.77%. The prevalence of hyperglycemia increases with age. High blood sugar is not only related to family heredity, but also closely related to modern lifestyle. (i) Most faculty members are in a highly tense life and competitive work state. High pressure will lead to increased excitation of sympathetic nerve and increased demand for insulin, resulting in relative insufficiency of insulin, resulting in abnormal glucose metabolism. (ii) A high-calorie diet and a sedentary and sedentary lifestyle. (iii) Many people like to eat sugary drinks or eat fruit as a meal, and live in a high-sugar diet for a long time. (iv) With the increase of age, the functions of various tissues and organs of the body are declining day by day. Therefore, we should pay attention to hyperglycemia and effectively control or reduce the occurrence of hyperglycemia. In daily life, we should eat a reasonable and healthy diet. It is suggested that patients should control the intake of fat and carbohydrates, reduce the intake of sugar, take part in some physical exercises moderately, avoid short-term strenuous exercise, and pay more attention to rest.

In this study, the total detection rate of dyslipidemia was 44.3%, and the prevalence rate of male was higher than that of female. Dyslipidemia, commonly known as hyperlipidemia, includes various abnormal manifestations including increased levels of total cholesterol (TC), triglyceride (TG), low-density lipoprotein cholesterol (LDL-C), and decreased levels of high-density lipoprotein cholesterol (HDL-C)^[5]. Dyslipidemia is usually manifested as dizziness, fatigue, numbness of limbs, discomfort of chest distress and intermittent abdominal pain. Dyslipidemia is very harmful to the human body. The healthy level of blood lipids is generally closely related to smoking, drinking, regular exercise, eating too much meat, and overeating. Dyslipidemia can be treated by dietary therapy and lifestyle improvement as basic treatment measures, and dietary restriction of edible oil, fat meat and walnuts. It is recommended to control the use of stimulating foods such as cigarettes and beer, and encourage moderate drinking of water. Besides, patients with dyslipidemia should control weight in a reasonable range, adhere to regular physical labor and exer-

cise, which can promote the enhancement of resistance and accelerate metabolism. Increasing physical activity can be used as a first-line treatment, and combined with drug treatment can achieve twice the result with half the effort. Keeping an optimistic attitude towards the disease can effectively inhibit the deterioration of the disease. Statistics from the National Cardiovascular Disease Center show that the number of people with dyslipidemia in China has exceeded 400 million. With the change of lifestyle, the blood lipid level of Chinese population is increasing year by year, and the prevalence of dyslipidemia is increasing significantly. Research data show that the prevalence of dyslipidemia in Chinese adults is as high as 41.9%^[5], which is much higher than that in some other countries.

The results of this survey showed that the detection rate of thyroid nodules in faculty members was 66.31%. With the increase of age, the prevalence of thyroid nodules is increasing year by year, and the prevalence of women is higher than that of men, which may be related to women's physiological factors and estrogen levels. Especially, in the current society, women are under great mental pressure, not only to do a good job outside, but also to shoulder the heavy responsibility of the family at home. Thyroid nodules are also related to obesity, sleep status, physical exercise and diet. With the development of ultrasound imaging technology, the diagnostic rate of thyroid diseases has been improved day by day. Some very small thyroid nodules, or any lesion changes can also be detected. Therefore, ultrasonic examination has become the preferred method for screening thyroid diseases. Thyroid gland is also the most important endocrine organ of the human body, and abnormal thyroid function will gradually affect people's health. Therefore, thyroid nodules should not be ignored, patients with thyroid nodules should pay more attention to diet, do not eat food with high iodine and salt content, avoid greasy food with high cholesterol content, eat less raw, cold, spicy and stimulating food, and eat more fruits and vegetables. In addition, patients with thyroid diseases should stabilize their emotions, adjust their mental state and take part in some physical exercises.

3 Pertinent recommendations

Based on this survey, we came up with the following pertinent recommendations.

(i) It is recommended to deeply aware of the importance of timely understanding of the health status of university teachers, we should pay special attention to the health status of teachers, strive to provide them with high-quality living and working conditions, and create a relaxed and comfortable working environment.

(ii) It is recommended to firmly promote the health education and health prevention of university teachers, vigorously popularize the knowledge of disease prevention and control, strengthen

the health awareness of university teachers, and improve their ability of disease prevention and control.

(iii) It is necessary to actively advocate healthy lifestyle and living habits, improve eating habits, pay attention to low-calorie, low-sugar, low-salt, low-fat diet, quit smoking and drinking.

(iv) It is recommended to take an active part in some proper physical exercises, such as playing basketball, jogging, swimming and other aerobic exercises.

(v) Colleges and universities should pay attention to the mental health factors of teachers and staff, pay attention to ensuring the timely guidance of negative emotions. The generation of pessimistic emotions will secrete harmful hormones, the staff should learn to self-regulate, such as through listening to music, chatting with others, participating in some entertainment activities and other ways to divert attention, rather than regulate themselves by looking for psychological doctors. They should avoid the negative impact of bad emotions on their health.

(vi) Regular physical examination, early detection, early diagnosis and early treatment of diseases, to improve the level of physical health.

In summary, the health status of university teachers directly affects the development of school education, and the health of teachers is very important. Therefore, it is required to attach great importance to and understand the health status of teachers and staff, organize regular physical examination, timely detection and early prevention and treatment of related diseases, and implement scientific and effective health control measures. These play a very important role in improving the physical and mental health level of teachers in colleges and universities.

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