Journal of Infrastructure, Policy and Development 2024, 8(14), 7092.
https://doi.org/10.24294/jipd7092

Article

A study on the measurement of occupational burnout and network security intervention of counselors in vocational colleges from the perspective of social ecology

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CITATION

Dang R, Samad NBA. (2024). A study on the measurement of occupational burnout and network security intervention of counselors in vocational colleges from the perspective of social ecology. Journal of Infrastructure, Policy and Development. 8(14): 7092. https://doi.org/10.24294/jipd7092

ARTICLE INFO

Received: 12 June 2024
Accepted: 10 July 2024
Available online: 20 November 2024

Abstract: With the rapid development of society and the advent of the information age, counselors in higher vocational colleges and universities are facing the double test of burnout and network security. Burnout affects counselors' work efficacy and psychological health, while cybersecurity poses certain hazards to counselors' occupational safety. Based on the social ecology perspective, this paper explores the measurement of burnout and puts forward corresponding countermeasure suggestions, with a view to improving the work efficiency and occupational safety of counselors in higher vocational colleges and universities, and providing useful references for the construction and management of counselor teams in higher vocational colleges and universities. This paper takes the job burnout status and network security structure of vocational college counselors as the research object, and explores its causes. Corresponding countermeasures have been proposed. This article selects 100 counselors from a vocational college in X city as the research objects. The latest version of China's job burnout scale, Maslach Burnout Inventory-General Survey (MBI-GS), was used to study it. The experimental results showed that in the dimension of emotional exhaustion, 55% of the subjects were mild. 40% were moderate and 5% were severe. In terms of cynicism, 65% were mild. 30% were moderate and 5% were moderate. On the "low achievement" dimension, the participants were "slightly" rated at 10%. "Moderate" was 75% and "Severe" was 15%. Across the three dimensions, the results showed that job burnout was widespread among vocational college counselors.

Keywords: job burnout; socio-ecological perspective; eco-social dynamics; vocational college counselors; cyber security intervention strategies

1. Introduction

With the rapid development of information technology, the Internet has become an important platform for counselor and students in higher vocational colleges to communicate, study and live. However, while this change brings convenience, it also poses new challenges to the work of counselors in higher vocational colleges. Under the perspective of social ecology, the burnout problem of counselors in higher vocational colleges and universities has gradually appeared, and its causes are not only related to work pressure and personal psychology, but also closely related to the increasingly complex network environment. As the backbone of students' ideological and political education and daily management, counselors' burnout not only affects their personal motivation and efficiency, but also may have a negative impact on students' healthy growth. Therefore, from the perspective of social

ecology, it is of great theoretical and practical value to explore the measurement of burnout among counselors in higher vocational colleges and how to alleviate burnout through cybersecurity intervention (Zimmermann and Renaud, 2021; Mijwil et al., 2023; Alsharida et al., 2023). Studying the burnout problem of counselors in higher vocational colleges and its intrinsic connection with network security is of great significance for enhancing counselors' occupational well-being and work efficiency, maintaining the psychological health of the student body, and promoting campus harmony and stability. First, through scientific and effective measurement methods, the degree of burnout of counselors can be accurately assessed, providing data support for the development of personalized intervention measures. Secondly, the study of network safety intervention helps to build a healthy and safe network environment and reduce the negative impact of undesirable information on counselors, so as to alleviate burnout. Finally, this study helps to enrich the theoretical application of social ecology, promote the innovation and development of education management in higher vocational colleges and universities, and enhance the quality of higher education.

This article explores the coping strategies for occupational burnout among vocational college counselors from the perspective of social ecology. From the perspective of job burnout of vocational college counselors, this paper analyzes the causes of job burnout and proposes countermeasures (Lubbadeh, 2020). A survey was conducted on 100 counselors from a vocational college in X city using the MBI-GS method. The innovation of this paper is that the practical significance of the paper is very large, which is mainly reflected in: vocational college counselors are an important part of maintaining higher vocational colleges teaching and student services. The research on the causes and countermeasures of job burnout would help guide the healthy operation and development of higher vocational colleges administrative work, so as to verify and enrich the job burnout theory of vocational college counselors. At the same time, it can also arouse the reflection of education executives and policy makers at all levels. This paper also explores the causes of job burnout among vocational college counselors from internal and external factors. Then, the countermeasures and suggestions to alleviate the job burnout of vocational college counselors are put forward from the individual level, the organizational level and the social level.

2. Related work

In recent years, the problem of job burnout has become an important research topic in the fields of psychology and management. Job stress, perceived social support, and job satisfaction are important predictors of job burnout. However, few studies have explored the mechanism of job stress on different dimensions of job burnout through perceived social support and job satisfaction among bank employees (Bakker and de Vries, 2020; Wu et al., 2020). Kim and Park (2017) analyzed the factors affecting work status for counselors in vocational colleges. He pointed out that burnout and engagement are the key determinants of service quality. He used survey data to analyze the impact of work factors (work requirements, work resources) on the work burnout and engagement of grassroots officials. Researchers believed this

was due to daily exposure to stressful environments and a lack of positive conditions in the workplace. Ghaniyoun et al., (2017) aimed to explore the relationship between psychological empowerment and job burnout of emergency center operators. Cognitive resources are considered to have the potential to buffer the negative effects of job demands. Derakhshanrad et al., (2019) explored the correlation of job burnout, job needs and cognitive resources for problem solving and innovation. Yang et al., (2018) aimed to explore whether positive emotions played a mediating role between job burnout and turnover intention of Chinese nurses. They both looked at the various conditions of job burnout and what causes it. However, the job burnout from an ecological perspective has not been studied.

Occupational burnout has a negative impact on personal well-being and increases the public health costs caused by resignation, absenteeism and reduced work performance. Through investigation and analysis, Angelini (2023) found that personality traits are closely related to the risk of occupational burnout among workers. Future research on occupational burnout should consider personality factors. El Hajj and Cook (2018) aimed to determine the prevalence of specific health behaviors and outcomes among Arab immigrants living in the United States and to assess the relationship between acculturation and health behaviors from a socioecological perspective. In this study, Acharya et al., (2020) documented and analyzed the perceptions of certain (60) farmers in 5 villages in the Kolaghat block of PurbaMedinipur, West Bengal, India. He analyzed farmers' understanding and views on thermal power, the environment and individual enterprises. Although they all analyzed job burnout, they did not take vocational college counselors as the research object. Therefore, it is not authoritative enough.

3. Algorithm for the coordinated development of ecology and society

3.1. Analysis of the current situation of counselors in vocational colleges

The burnout problem faced by counselors in higher vocational colleges and universities is mainly manifested in diminished work enthusiasm, reduced sense of achievement, and physical and mental exhaustion. In higher vocational colleges and universities, counselors are not only responsible for the daily management of students, but also pay attention to the psychological health and academic development of students, so their work is under great pressure and heavy responsibility. For a long time, this kind of high-intensity work pressure can easily lead to burnout of counselors, which in turn affects their work quality and efficiency.

In higher vocational education, counselors hold several positions and play an important role. They not only guide students in their studies, but also pay attention to their mental health, and are involved in many fields such as life management. Specifically, counselors will help students plan their study plans and career development, provide psychological counseling, manage their daily lives, promote students' ideological education, and be responsible for student safety. In addition, they are also committed to students' career exploration and employment guidance. The role of counselors in higher vocational colleges is far more than learning

consultants or psychological counselors. They are the key force to promote the all-round development of students. They work closely with students, counselor and school departments to create a high-quality educational environment. Therefore, research and intervention measures to deal with the occupational burnout of counselors are essential to ensure the efficient operation of the counselor team and even improve the overall quality of higher vocational education.

Therefore, the counselors of higher vocational colleges are not only the mentors of students in their learning and life, but also the promoters of their all-round development. They work closely with students, teachers and various school departments to create a good educational environment and promote the all-round development of students. The research and intervention measures on occupational burnout are of great significance to ensure the health and effectiveness of the counselor team, thereby improving the quality of the entire higher vocational education.

With the arrival of the information age, network security issues have also brought new challenges to the work of counselors in higher vocational colleges and universities. In the network environment, counselors need to face a variety of information that is difficult to distinguish between true and false, and the complexity and change of network public opinion, how to effectively prevent and respond to network security problems while protecting students' personal privacy has become an important issue that counselors need to face.

The existence of burnout and network security problems not only affects the physical and mental health and work effectiveness of counselors, but also adversely affects the growth and development of students. Therefore, higher vocational colleges and universities need to attach great importance to the burnout and network security problems of counselors, and help counselors effectively deal with these problems by strengthening training, improving the system, providing psychological support, etc., to enhance their job satisfaction and happiness, and provide a more solid guarantee for the healthy growth of students. At the same time, higher vocational colleges and universities should also strengthen cooperation with the government, enterprises and other social sectors to jointly build a safe and healthy network environment and provide counselors and students with better network education services.

From the perspective of social ecology, the challenges faced by counselors in higher vocational colleges include two aspects: burnout and network security. Although it may seem different, the two are actually closely connected. Occupational burnout affects the mental health and work efficiency of counselors, while cybersecurity has become a new source of stress, further exacerbating burnout. In the information age, counselors need to deal with a large amount of online information, such as student social media dynamics, signs of cyberbullying, and online educational resources. It is increasingly difficult to judge the authenticity and appropriateness of this information, such as distinguishing between students' true information and false information, screening the scientific nature of online mental health recommendations, and finding a balance between protecting students' privacy and timely intervention. These challenges increase the workload of counselors and may lead to unnecessary psychological stress, which in turn exacerbates professional

burnout. At the same time, counselors also need to teach students how to protect themselves in the digital world and prevent online fraud and information leakage. In the absence of clear guidance and effective tools, this task further increases the burden on counselors and affects their professional satisfaction and mental state. Therefore, the link between burnout and cyber security issues shows that while maintaining students' physical and mental health and digital security, counselors are also under pressure from information overload, heavy responsibilities, and increased skill requirements. Vocational colleges and the society should cooperate to provide professional training, establish network management and mental health support systems, and optimize the working environment to reduce the professional burnout of counselors, enhance their ability to deal with network security challenges, and ensure the well-being of teachers and students and the harmonious development of the campus.

3.2. Eco-social dynamics

Sustainable development refers to the departmental behaviors of multiple organizations or human units, which influence and restrict each other. However, on the whole, it is the overall performance produced by the behavior of each department that can last (Yang et al., 2017; Saeed, 2017). Sustainable development develops people based on people's needs, which emphasizes people's needs rather than market commodities. It is about meeting the basic needs of all people and providing all people with the opportunity to fulfill their aspirations for a better life. Therefore, only the global analysis method based on the system theory can analyze the interaction and synergy between the various elements, so that the comprehensive effect of the whole system can be optimal. System dynamics is a cross and comprehensive method to study the system feedback mechanism from the perspective of establishing flow level and flow rate system. Its uniqueness is that system dynamics starts from the internal microstructure of the system. Differential equations are used as analytical tools to find solutions to problems by analyzing the internal relationship between the structure and motion of the system using computer simulation techniques (Guravaiah and Leela, 2017).

System dynamics modeling is based on the investigation of the current situation of coordinated development of China's regional ecological-social systems, which can clarify the modeling goals. As shown in **Figure 1**, the modeling process of the system dynamics model reflects the organic combination of qualitative and quantitative. First of all, according to the description of the investigation, a systematic analysis of the problem is carried out. An architecture is established and a systematic process is formed. Second, a model is built according to the flow graph. A simulation test is then carried out to verify the consistency of the simulation results with the actual situation. After testing the model, a simulation analysis is performed. Simulation analysis is to carry out systematic operation by setting different situations and different variables according to the research objectives. Its effects are observed to analyze its effectiveness (Azimi et al., 2017; Memon and Lee, 2017). Then, in the case of further improvement, it can provide an effective solution for practical problems by modifying variables, function parameters, designing new

scenarios, and performing simulation analysis until satisfactory simulation results are obtained (Han et al., 2017; Li et al., 2018).

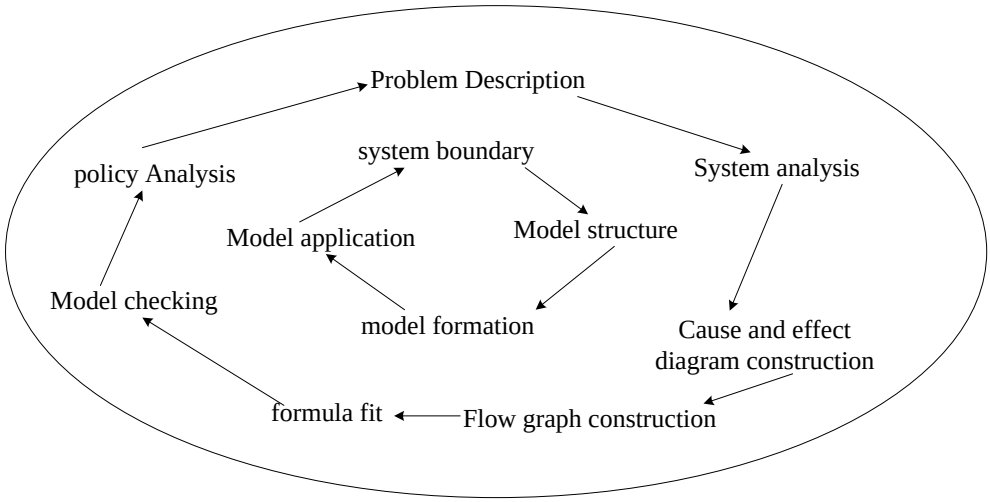


Figure 1. Basic steps of modeling.

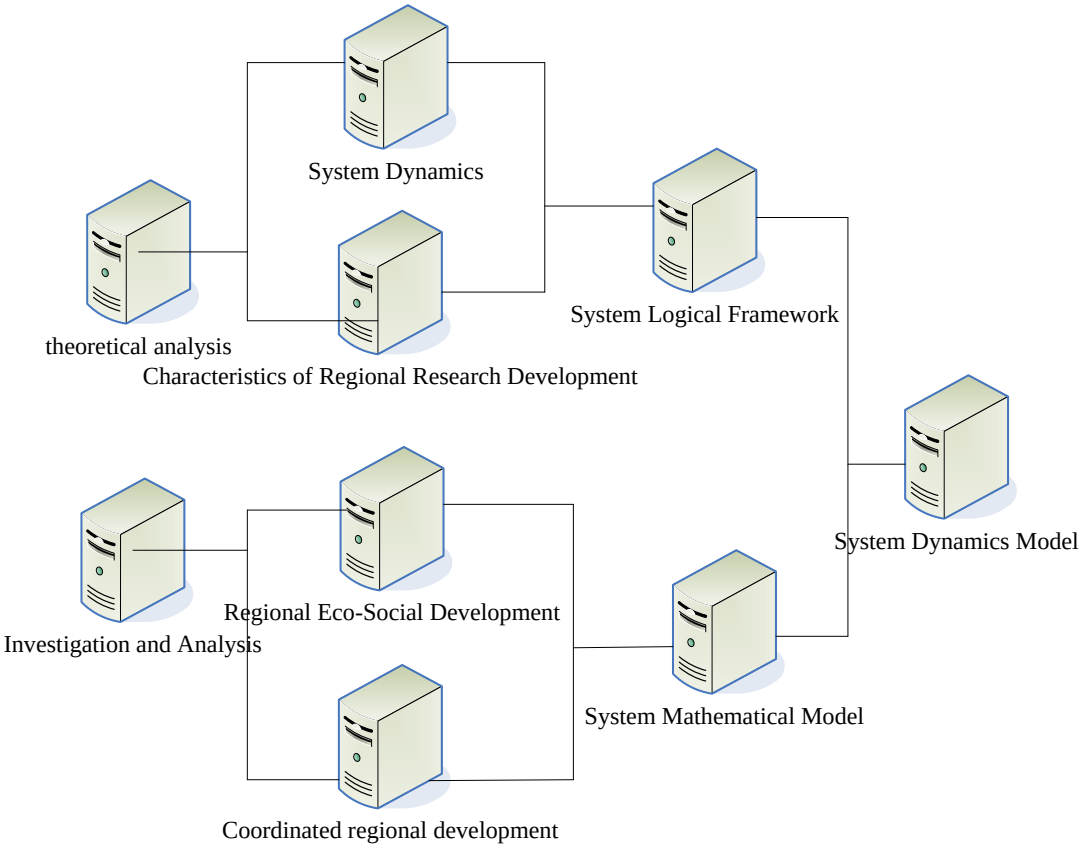


Figure 2. Modeling ideas.

This paper constructs a system dynamic model of ecological-society coordinated development, which provides a theoretical basis for realizing ecological-society harmonious development. In the specific modeling, based on theoretical analysis and field research, aiming at the coordinated process of the development of ecological and social subsystems, and taking regional development statistics as the

mathematical model, this paper proposes a systematic ecological-social coordinated development model (Scitovski, 2018; Cheng et al., 2017). **Figure 2** shows the basic principle of our model.

The system dynamics model shows its important value in solving the problem of professional burnout of counselors. Starting from the perspective of social ecology, the model analyzes in depth the current situation of counselor burnout and its causes, such as emotional failure, negative work attitude and low sense of accomplishment. The model further constructs a flow chart that clearly shows the changes in the counselor's working environment and psychological state, clarifies flow level variables such as the counselor's accumulated stress level, and flow variables such as the rate of pressure change, and reveals the dynamic evolution of these variables over time.

Model construction and simulation include several key steps: first conduct a comprehensive analysis of the problem, and build a system framework and process based on the survey data; then establish a mathematical model based on this framework, and use computer simulation to verify the accuracy of the model; finally, by adjusting different situations and variables for simulation analysis, to ensure that the model can effectively reflect real problems. This process reveals the deep connection between burnout and cybersecurity, as well as their combined impact on counselor productivity and mental health. This model not only identifies the main factors that cause counselor burnout, but also provides strong support for the development of solutions. Through simulation, we can predict the potential effects of various training and mental health support measures on reducing counselor burnout, thus providing a scientific basis for the decision-making of higher vocational colleges. In the end, by improving the working environment, strengthening network management, and improving the skills of counselors, the model will help alleviate the professional burnout of counselors, enhance their ability to deal with network security challenges, and promote the harmonious development of the campus as a whole.

3.3. System dynamics approach

3.3.1. Methods of constructing the logical structure of the system

The logical structure of the constructed system is represented by a flow graph. It is divided into two categories: flow level type and flow rate type. In addition, there are many auxiliary and constants (Zhong et al., 2018; Shi et al., 2018). The flow graph consists of flow level variables, flow rate variables, auxiliary variables and constants. Based on the causal relationship diagram, it reflects the state of the system changing with time.

(1) Flow level variable

Variables in flow location record material, energy, or information accumulated over time. There is an easy way to distinguish flow state variables from other variables. That is, it is assumed that time stops, and the value of this variable is still 0 at this time. The flow level parameter records the current status of the system.

(2) Flow rate variable

It records the difference between the flow level and flow rate of the inventory

over time, that is, in a unit of time. It reflects the rate of change of the operating state of the system (Zhu and Xu, 2018; Benmounah et al., 2017). In the system dynamic model, the flow velocity parameter is described by a flow field parameter in the direction of the arrow. There is a control valve in the center of the flow field to control the flow rate. At the other end of the tunnel, cloud-like shapes represent the source or direction of water flow. In the model, the expression of flow level value and flow variable is shown in **Figure 3**.

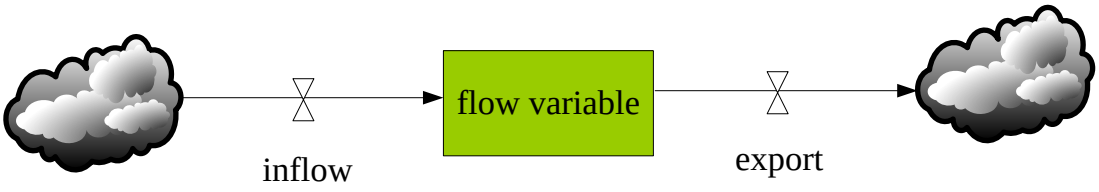


Figure 3. Flow level variable and flow rate variable.

The calculus equation is used to express the mathematical operation of the flow position variable as:

$$Stock(d) = \int_{d_0}^{d} [Inflow(w) - Outflow(w)]\, tw + Stock(d_0)1 \quad (1)$$

Among them, *Inflow* (*w*) represents the value of the inflow variable in unit time. *Outflow* (*w*) is the value of the outflow flow level variable per unit time. *Stock* (*d*) is the flow level variable.

When building the model, the differential equation for the flow potential difference is represented by the following notation:

$$Stock = INTEGRAL(Inflow - Outflow, Stock_{d_0}) \quad (2)$$

3.3.2. Establishment of mathematical model of system variables

Variables in a system dynamics model have many different functions, depending on the meaning expressed (Davahli et al., 2020). Next, this article explores how to construct other types of variables.

Based on the panel data regression analysis, first, it is assumed that there are *M* samples of *D*-year time series data. Among them, there are dependent variable b_{jd} and explanatory variable $a_{rjd}. j = 1,2,\ldots,M$ represents the individual number, and $d = 1,2,\ldots,D$ represents the time number. The dependent variable and the explanatory variable satisfy a linear relationship:

$$b_{jd} = \phi_{jd} + \eta_{jd} a_{jd} + v_{jd} \quad (3)$$

The regression equation is a mathematical expression that reflects the regression relationship of one variable (dependent variable) to another or a group of variables (independent variables) obtained through regression analysis based on sample data (Doley et al., 2020; Gao et al., 2021]. In the panel data, this paper needs to examine the parameters of the regression equation from two perspectives, that is, the agreement between the slope coefficient and the intercept factor of the regression equation under different sampling conditions. This means that it must first be determined whether sampling has an effect on the slope and intercept of the regression equation. Theoretically, the trial is divided into the following phases:

First: Different samples are tested to see if their inclinations are the same.

Second: The agreement between the intercepts of the different samples is checked.

Third: Whether the slope and intercept of the regression equation under each sampling are consistent is tested.

If the verification of the first step is passed, it means that the relationship between the variables can be expressed by the same regression equation (Carman et al., 2022). If it fails, a second test can be performed. If it is qualified, it means that the slopes of the regression equations of all samples are the same, but vary from sample to sample. If you fail the second test, you can take the third test. However, when the slopes are inconsistent, the results of the two tests are the same. Therefore, when testing with covariance, the following two situations are generally considered:

G_1: The slope of the regression equation is consistent in different samples.

$$b_{jd} = \phi_j + \eta a_{jd} + v_{jd} \tag{4}$$

This type of model is called a variable intercept model. In this type of model, different individuals have individual influences but no structural changes. Individual influences can be represented by the intercept term.

G_2: The regression equations for each sample have the same intercept and slope.

$$b_{jd} = \phi + \eta a_{jd} + v_{jd} \tag{5}$$

After testing, if the above two assumptions cannot be established, then a mathematical model with variable coefficients should be established:

$$b_{jd} = \phi_j + \eta_j a_{jd} + v_{jd} \tag{6}$$

Therefore, this paper uses the analysis of covariance to test the hypothesis:

First, the least squares estimation equations for ϕ_j and η_j are:

$$\hat{\eta}_j = S_{aa}^{-1} S_{ab,j} \tag{7}$$

$$\hat{\eta}_j = S_{aa}^{-1} S_{ab,j} \tag{8}$$

Among them, $\hat{b}_j = \frac{1}{D}\sum_{d=1}^{D} b_{jd}$ represents the mean value of observations in the jth sample D year of the dependent variable. $\bar{a}_j = \frac{1}{D}\sum_{d=1}^{D} a_{jd}$ represents the mean of observations in year D of the jth sample of the explanatory variable.

$$S_{aa,j} = \sum_{d=1}^{D} (a_{jd} - \bar{a}_j)(a_{jd} - \bar{a}_j)^1 \tag{9}$$

$$S_{ab,j} = \sum_{d=1}^{D} (a_{jd} - \bar{a}_j)(b_{jd} - \bar{b}_j) \tag{10}$$

$$S_{bb,j} = \sum_{d=1}^{D} (a_{jd} - \bar{a}_j)(a_{jd} - \bar{a}_j)^2 \tag{11}$$

The residual sum of squares of Equation (6) is:

$$W_1 = \sum_{j=1}^{M} KWW_j = \sum_{j=1}^{M} (S_{bb,j} - S_{ab,j}^1 S_{aa,j}^{-1} S_{ab,j}) \tag{12}$$

The residual sum of squares of Equation G_2 is:

$$W_2 = S_{bb} - S_{ab}^1 S_{aa}^{-1} S_{ab} \tag{13}$$

The residual sum of squares of Equation G_1 is:

$$W_3 = D_{bb} - D_{ab}^1 D_{aa}^{-1} D_{ab} \tag{14}$$

Among them, $\bar{a} = \frac{1}{MD}\sum_{j=1}^{M}\sum_{d=1}^{D} a_{jd}$ and $\bar{b} = \frac{1}{MD}\sum_{j=1}^{M}\sum_{d=1}^{D} b_{jd}$ are the mean values of the explanatory variable and the dependent variable for all observations,

respectively.

$$D_{aa} = \sum_{j=1}^{M}\sum_{d=1}^{D}(a_{jd} - \bar{a})(a_{jd} - \bar{a})^1 \tag{15}$$

$$D_{ab} = \sum_{j=1}^{M}\sum_{d=1}^{D}(a_{jd} - \bar{a})^1(a_{jd} - \bar{a})^1 \tag{16}$$

$$D_{bb} = \sum_{j=1}^{M}\sum_{d=1}^{D}(b_{jd} - \bar{b})^2 \tag{17}$$

The covariance test is similar to the generalized hypothesis test based on the linear regression residual sum of squares:

$$P_2 = \frac{(W_3 - W_1)/[(M-1)(r+1)]}{W/(MD - M(r+1))} - P[(M-1)(r+1), M(D-r-1] \tag{18}$$

If the values of the obtained statistics are not significant, the sampled data are consistent with the pattern above. Otherwise, if it is significant, G_1 is continued to be tested, and the *P* statistic P_1 is constructed:

$$P_1 = \frac{(W_3 - W_1)/[(M-1)r]}{W_1/(MD - M(r+1))} - P[(M-1)k, M(D-r-1] \tag{19}$$

If statistic P_1 is not significant, then the sample data conforms to G_1. Otherwise the null hypothesis is rejected and the model of G_2 is selected.

The equations in this article are used to describe the changes in the state of the system over time. The flow level variable shows the state of the system at a certain point in time, while the flow variable shows the speed at which the system state changes per unit time. The calculus equation reveals the dynamics of inflow and outflow within the system and its impact on the system stock. This model is based on the interaction of system components, reflecting causality and feedback mechanisms through flow diagrams and differential equations. In the study, these equations were combined with the counselor's burnout data. The actual level of burnout, such as emotional exhaustion, is transformed into variables in the model. In this way, the abstract mental state is quantified, and its trend of change over time can be simulated in the model.

The charts and data analysis in the experimental design part are used to verify and adjust the system dynamics model. These data reflect the real situation of counselor burnout. The variables and parameters in the model are optimized based on these data to ensure that the simulation results are consistent with the actual situation. For example, by simulating the effects of different interventions on variables of burnout level, the effect of these measures on the level of burnout of counselors can be predicted. In short, the equation is closely related to the data graph and analysis in the experimental design. The data graph shows the distribution of burnout, and the equation provides a dynamic mathematical framework for these data. This allows researchers to adjust the model parameters, simulate different intervention strategies, and evaluate their potential to reduce burnout, thus providing a scientific basis for the development of effective interventions.

4. Current status of job burnout among vocational college counselors and countermeasures for network security intervention

4.1. Experimental design

1) Research design and sample selection

This study adopts a combination of quantitative and qualitative methods to ensure a comprehensive understanding of occupational burnout and network security issues for counselors in vocational colleges. The research subjects selected five higher vocational colleges with different majors in X City to ensure the representativeness and diversity of the samples. Counselors were selected as research subjects because they play a central role in student management and mental health counseling, and their burnout status is directly related to the well-being of students and campus safety.

2) Sample selection process

A total of 110 questionnaires were distributed, 108 were successfully recovered, and 100 valid questionnaires were recovered, with a recovery rate of 98.2% and an effective rate of 92.6%. The samples covered counselors from different departments, such as school offices, academic affairs offices, moral education rooms, etc., ensuring the wide applicability of the research. Demographic information such as gender, age, marital status and educational background of the sample are listed in detail in **Tables 1** and **2** to show the composition of the research subjects.

3) Data collection tools and methods

The MBI-GS scale is mainly used to measure occupational burnout, which has been proven to have good validity and reliability in multiple studies. The MBI-GS scale contains three dimensions: emotional exhaustion, cynicism, and low sense of personal accomplishment. The score uses a Likert 7-component table of 0–6, of which 0–2 points indicate mild, 2–4 points indicate moderate, and 4–6 points indicate severe burnout.

4) Data collection procedures

Data collection is carried out through questionnaires, ensuring anonymity and voluntary principles to improve the authenticity of the data. Before the survey, the research team introduced the research purpose and confidentiality commitment to the participants in detail to obtain their informed consent.

5) Data analysis method

The statistical analysis of the data is done using SPSS or other statistical software, including descriptive statistical analysis, independent sample *t*-tests, etc., to explore the differences in occupational burnout among different groups. In addition, the system dynamics method is used to establish a model, by constructing flow level variables and flow variables, differential equations are used to describe the changes in system state over time, in order to simulate the development trend of counselor burnout and its interaction with network security. Influence. The model construction process includes: system analysis, model establishment, simulation verification and simulation analysis to ensure the accuracy and practicality of the model. In order to analyze the effect of network security interventions, this study designed simulation experiments, considering the adjustment of variables in different situations, such as

strengthening network security training, establishing rapid response mechanisms, etc., and using models to predict the potential impact of these interventions on the degree of occupational burnout. The composition and basic information of the research subjects are shown in **Tables 1** and **2**.

Table 1. Departmental composition of subjects.

serial number	Office	number of people	The proportion (%)
1	school office	15	15%
2	Academic Affairs Office	50	50%
3	classroom	12	12%
4	Moral Education Room	15	15%
5	General Services	8	8%

Table 2. Basic information of subjects.

serial number		Demographic variables	number of people	The proportion (%)
1	gender	Man	51	51%
		Woman	49	49%
2	age	under 30	40	40%
		31–40	45	45%
		40–50	7	7%
		over 50 years old	8	8%
3	marital status	Married	80	80%
		unmarried	20	20%
4	Education	College and below	75	75%
		Undergraduate	12	12%
		Master degree and above	13	13%

4.2. Results

1) The overall situation of job burnout of the subjects

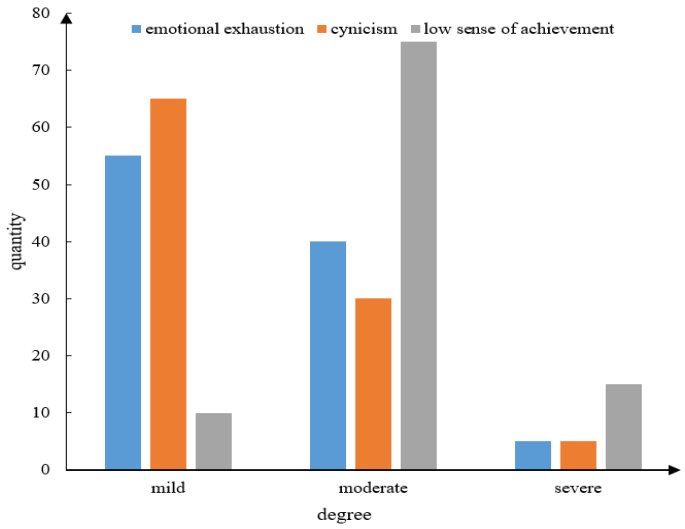


Figure 4. Overall burnout.

As can be seen from the data in **Figure 4**, on the dimension of emotional exhaustion, 55% of the participants were mild, 40% were moderate, and 5% were severe. In terms of cynicism, 65% were mild, 30% were moderate, and 5% were severe. On the dimension of "low sense of achievement", participants were rated as "mild" at 10%, "moderate" at 75%, and "severely" at 15%. In the three dimensions, whether it is in the percentage index or in the average score, the sense of achievement is the worst. The results show that job burnout is widespread among college students.

2) Gender differences in the degree of job burnout

The independent samples t-test was used to analyze the degree of work fatigue in men and women. The results are shown in **Table 3**.

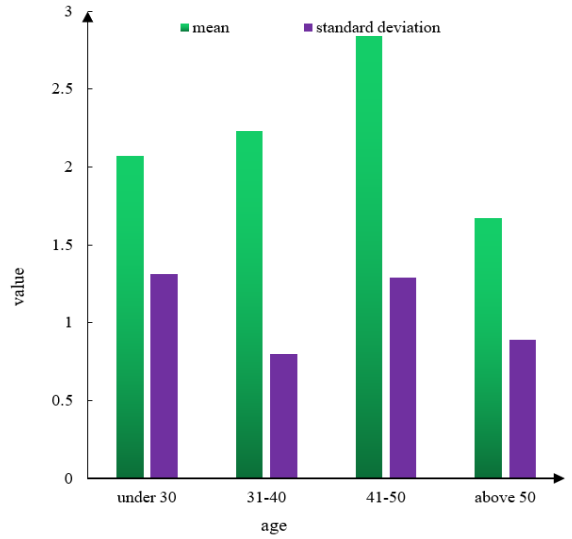
Table 3. Gender differences in job burnout levels.

dimension	gender	mean	standard deviation	T	Sig
emotional exhaustion	Man	1.89	1.07	−2.12	0.037
	Woman	2.33	1.05		
cynicism	Man	1.51	1.16	−2.43	0.017
	Woman	2.09	1.31		
low personal achievement	Man	3.42	1.38	0.48	0.630
	Woman	3.31	0.95		

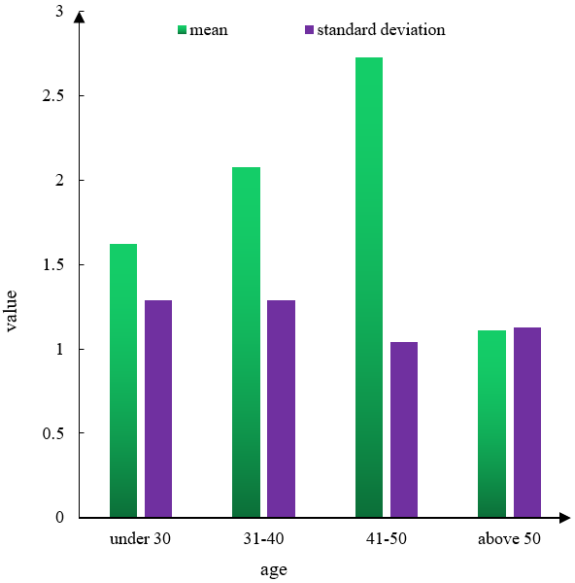
As can be seen from **Table 3**, in the dimension of emotional consumption, the Sig value of the T test was 0.037. When the significance level was 0.05, 0.037 < 0.05. Therefore, there are significant differences in the emotional consumption dimension of the research subjects. Among them, the emotional consumption dimension of men and women was 1.89 and 2.33, respectively. On the cynicism dimension, the T-test had a Sig value of 0.017. When the significance level was 0.05, 0.017 < 0.05. Therefore, there are significant differences in the cynicism dimension of the study subjects. Among them, the cynicism dimension for men and women was 1.51 and 2.09, respectively. In the dimension of low individual achievement, the Sig value of the T test was 0.630. When the significance level was 0.05, the Sig value was 0.630 > 0.05. Therefore, there is no significant difference between men and women in the dimension of low individual achievement. Overall, women have higher levels of job burnout than men. The reason may be related to the difference in the social roles of men and women. As the main family members, women have to run the house, take care of children and the elderly, and work. As a result, their jobs are very stressful, which leads to their job burnout.

3) The age difference of job burnout degree

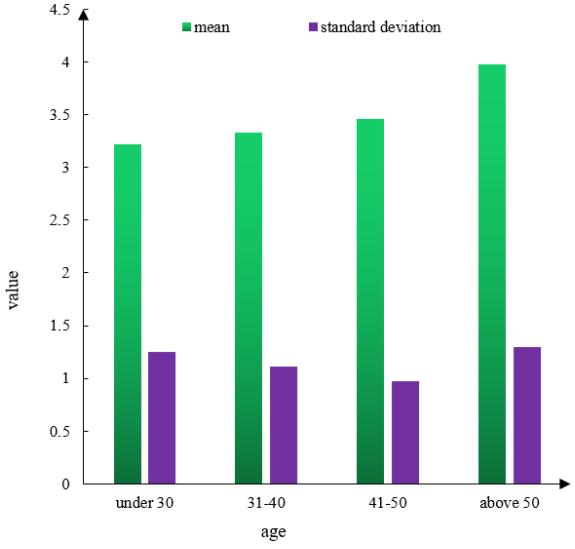
Using the single factor variance method, the job burnout of the research subjects was statistically processed, as shown in **Figure 5**. Among them, **Figure 5a** is the result of Emotional exhaustion, **Figure 5b** is the result of Cynical, **Figure 5c** is the result of Low sense of personal achievement, and **Figure 5d** is the result of Sig value of the F test of three dimensions.



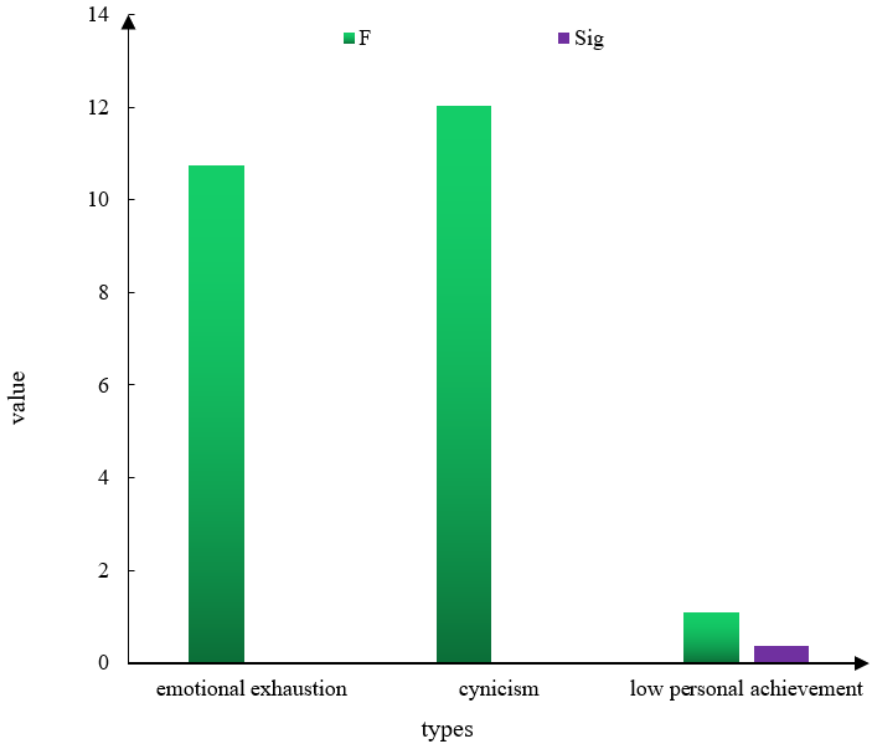
(a) Emotional exhaustion.



(b) Cynical.



(c) Low sense of personal achievement.



(d) Sig value of the *F* test of three dimensions.

Figure 5. Age differences in burnout levels.

From **Figures 5a–d**, it can be seen that the Sig value of *F*-test on emotional consumption of participants of different age groups was 0.000. When the significance level was 0.05, 0.000 was less than 0.05. Therefore, participants of different age groups have significant differences in the dimension of emotional exhaustion. As can be seen from **Figures 5b–d**, the *F*-test Sig value of participants in different age groups was 0.000. When the significance level was 0.05, 0.000 was less than 0.05. Thus, participants of different age groups differ significantly on the dimension of cynicism. As can be seen from **Figures 5c,d**, in the dimension of individual low sense of achievement, the Sig value of the participant's *F*-test was 0.363. When the significance level was 0.05, 0.363 was greater than 0.05. Therefore, there is no significant difference in the low dimension of individual achievement among participants of different age groups. The study found that there are significant differences in the level of job burnout among vocational college counselors in different age groups. Among them, vocational college counselors aged 41–50 have the highest level of job burnout. Study subjects under the age of 30 had lower levels of job burnout. This is because managers under the age of 30 are on the rise in their careers. They are young and strong and belong to the new force in the management department. Most of them have just started their jobs and do not have high expectations, so they feel less tired. People between the ages of 41 and 50, including those over 50, have a much lower income in management jobs compared to their counterparts in other industries due to the larger family burden. This results in a higher sense of achievement and higher job burnout.

4) Differences in the degree of job burnout in terms of academic qualifications

Through one-way variance, the job burnout of college students with different

educational backgrounds was counted, and a statistical analysis was carried out, as shown in **Table 4**.

Table 4. Differences in the degree of job burnout by education.

dimension	Education	mean	standard deviation	*F*	Sig
emotional exhaustion	College and below	1.77	0.78	12.74	0.000
	Undergraduate	2.09	1.15		
	Master degree and above	2.74	0.87		
cynicism	College and below	1.56	1.16	0.52	0.596
	Undergraduate	1.80	1.36		
	Master degree and above	2.02	1.00		
low personal achievement	College and below	3.51	0.96	10.78	0.000
	Undergraduate	3.41	1.26		
	Master degree and above	4.12	0.91		

As can be seen from **Table 4**, in the dimension of emotional consumption, the Sig value of the F test was 0.000. At a significance level of 0.05, the Sig value was 0.000. Therefore, there are significant differences in emotional consumption among people with different educational levels. In the cynicism dimension, the Sig value of the F-test was 0.596. When the significance level was 0.05, the Sig value was 0.596 > 0.05. Therefore, there is no significant difference in the degree of cynicism across education levels. In the dimension of individual low sense of achievement, the Sig value of the *F* test was 0.000, below the significant level of 0.05, 0.000 < 0.05. Therefore, there are significant differences in the sense of achievement of individuals with different educational levels. In general, the level of job burnout of those with a master's degree or above was higher than that of those with a bachelor's degree, a junior college degree or below. This suggests that managers with higher levels of education have higher expectations for their jobs. However, management jobs are paid very little. Besides, personal development space is limited, leading to job depletion.

5) Differences in the degree of job burnout with or without staffing

The independent sample *T* test was used to test whether there was a significant effect on the level of job burnout of college students with or without compilation, as shown in **Table 5**.

Table 5. Differences in the degree of job burnout with or without the establishment.

dimension	prepared by	mean	standard deviation	*T*	Sig
emotional exhaustion	Yes	2.01	1.01	−2.82	0.003
	No	2.69	1.12		
cynicism	Yes	1.60	1.25	−1.42	0.159
	No	1.96	1.28		
low personal achievement	Yes	3.29	1.22	−0.49	0.624
	No	3.40	1.14		

As shown in **Table 5**, in terms of emotional consumption, the Sig value of the

T-test was 0.003. When the significance level was 0.05, 0003 < 0.05. There is thus a clear difference in the cynical dimension of staff availability. In the cynicism dimension, the *T*-test had a Sig value of 0.159. However, the Sig value was 0.159 at the significant level of 0.05, which was greater than 0.05. Thus, there is no significant difference in the cynicism dimension of staffing or not. In the dimension of low personal achievement, the Sig value of the *T* test was 0.624. With a significance level of 0.05, the Sig value was 0.624 > 0.05. Therefore, there is a significant difference in the dimension of individual achievement of the staff with or without organization. In general, the job burnout level of unstaffed staff is significantly higher than that of staff with staff. With the current small number of colleges, administrative staff without regular jobs can easily lose their jobs.

4.3. Reasons for career burnout of vocational college counselors

1) The degree of professional identity is low

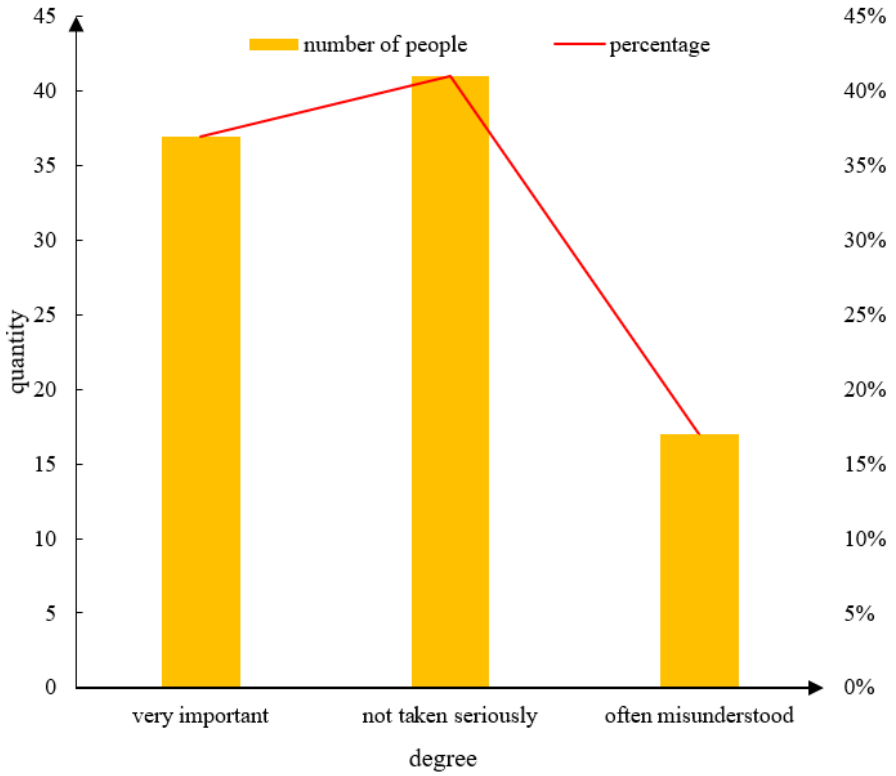


Figure 6. Survey of the status of *X* vocational college counselors at the school.

With the emphasis and development of the Chinese government on education, Chinese counselor have gradually gained general recognition from all walks of life. The status of counselor is also constantly improving. In particular, cities with high social identity are more likely to be respected by society. However, the group behind higher vocational colleges counselor, namely vocational college counselors, has a low level of professional identity. When it comes to school, everyone seems to have only two counselor and students in their hearts. All work in the school revolves around counselor and students and is not given the respect it deserves. Many people feel that the management of the higher vocational colleges is very easy, and only some counselors with poor teaching quality are transferred to the management

department. This article found in the recruitment that some students applied for teaching positions. After the school's screening, it is believed that some college students are more suitable for management work, so they are recruited into the management department. Therefore, most people choose other jobs. Through personal experience and related research on the management of colleges and universities, it is found that the most fundamental recognition and respect of the management personnel by the society, counselor, parents and schools are not sufficient. As shown in **Figure 6**, 41% of college students feel that their position in school is not valued, and 17% of students feel that they are misunderstood in school. The public also sees managers as people who do chores. This social orientation has caused great harm to the self-esteem of vocational college counselors, which makes their sense of personal achievement decline, and thus induces their job burnout.

2) Salary and benefits are low

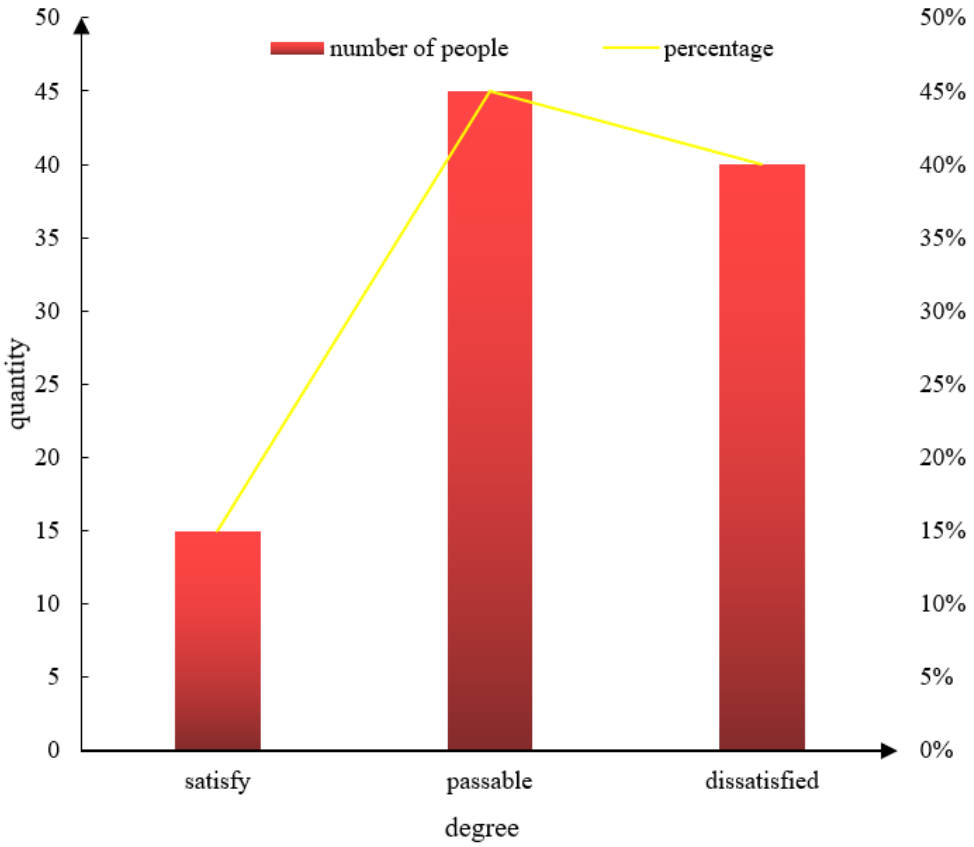


Figure 7. Satisfaction of the administrative staff of higher vocational colleges *X* with the salary package under the performance-based salary system.

For example, in a higher vocational college in *X*, after the implementation of the performance-based salary system, the teacher's salary has been increased by 10% in the basic salary. 70% of the basic performance salary is determined according to the position and working hours, which is a fixed figure. 30% of the performance reward is assessed by the school on the performance of all counselor and distributed based on the results of the assessment. This performance-based compensation system seems fair and reasonable on the surface. However, in practice, the compensation for managers has not been significantly improved. It achieves more gains by doing more,

less gains by doing less, and no gains if not done. counselor have class hour fees, full attendance awards, overload allowances, morning reading, evening self-study, etc. Some school administrators work overtime without overtime pay. The school's regulations allow employees to take vacations and only two days of overtime a month. Some employees are busy and work overtime without any reward. For example, counselor in a school get a scholarship every year, depending on their performance in college. Generally, it ranges from 5000 to 10,000 yuan. Some counselor can even get 20,000 to 30,000 yuan, while administrators only get 800 yuan. Although administrators are not directly involved in teaching, they are behind the counselor. They are also doing their part for counselor. However, the reward obtained is far less than that of the teacher. As shown in **Figure 7**, 40% of executives are dissatisfied with compensation. 45% of managers think the salary level is acceptable, only 15% of managers are satisfied. The huge disparity in salary levels is an important factor leading to job burnout among vocational college counselors.

3) It is difficult for vocational college counselors to be promoted and have little room for development.

According to the survey, there is basically no room for promotion of current vocational college counselors in *X* city. As shown in **Figure 8**, 40% of managers expressed dissatisfaction. 40% of managers said passable, and 20% said they were satisfied. This also means that many people in the management department choose to leave their fields and do some management things. Day after day, the tedious and hectic administrative work made them more and more alienated from their expertise. If they lose opportunities for professional development, have no hope of promotion, and don't have much room for development, it's easy to tire managers who have higher expectations for their jobs.

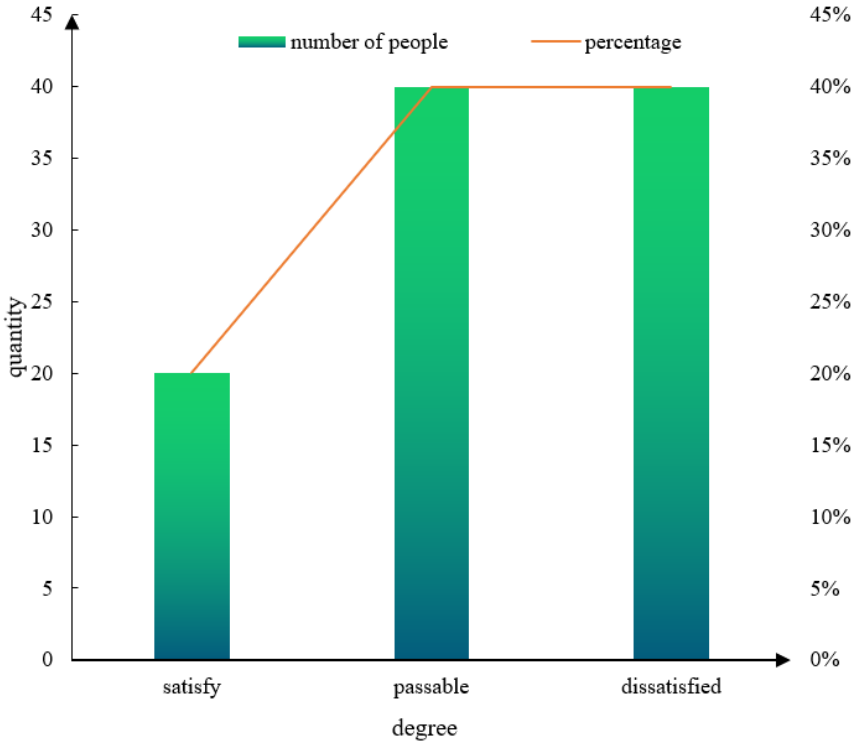


Figure 8. Satisfaction of *X* vocational college counselors with school promotions.

4.4. Countermeasures to alleviate the job burnout of vocational college counselors

1) Be good at learning to improve professional quality and ability

Many people believe that management is a very easy task that anyone can do. This is not true. With the expansion of the school-running scale of colleges and universities, the management of colleges and universities has become more and more difficult. This requires the specialization of management talents in colleges and universities. Due to the needs of work, administrative staff often have to deal with a large number of documents, forms, etc. Most of the time managing this involves dealing with computers. Therefore, higher requirements are put forward for the computer operation of managers, the use of comprehensive office software and the use of printing equipment. Secondly, the working hours of the administrative staff are carried out in the general environment of the school. They are not directly involved in the management of education and teaching. This requires new-age managers to have a basic knowledge of pedagogy and psychology. By improving their degree of specialization, they can effectively improve the work efficiency of administrative staff and make them play a greater role, thereby enhancing their self-confidence and reducing their job burnout.

2) Efficient time management

The high-intensity, complicated and sudden administrative work requires managers to have efficient time management capabilities. Due to the reduction of administrators in various universities, many vocational college counselors are currently held by one person. Many managers not only have to do their jobs, but also do other things. Managers would forget some important things if they can’t organize their work well and arrange their work reasonably. It is often seen that some managers are busy all day and often stay up late, but the quality of their work is not high. They lose things, and often make mistakes. If the work cannot be carried out in a reasonable and planned manner, the work efficiency of managers would be greatly reduced. Frequent mistakes affect their enthusiasm for work, which makes them exhausted at work.

3) Attach importance to the professional training of management talents

With the continuous improvement of the quality of management talents, many college graduates with higher education level have also joined this ranks. However, because the content of their work and administrative work is not the same, many college students with a high degree of education lack the relevant knowledge of education, management, and psychology at the beginning of their work. For new managers, it often creates negativity and obstacles at work. In terms of training content, training cycle, training process, etc., all schools should pay attention to ensure that the training of management personnel can not just stay in form. As far as the professional training of school managers is concerned, it can be discussed from four aspects, that is, the training of professional knowledge, professional skills, professional quality and professional ethics for managers. In the training of management talents in colleges and universities, professional skills are a key link in the training of management talents in colleges and universities. It is also the basis for the cultivation of management talents in colleges and universities. In addition to

basic cultural knowledge, vocational college counselors must not only have basic knowledge of pedagogy and psychology, but also strengthen the study of professional knowledge and professional skills required for this position. Therefore, universities at all levels should strengthen the induction training of management personnel, such as school rules and regulations, computer operation level, etc. After training, they must have corresponding teacher qualification certificates to strengthen the quality of management personnel and ensure the smooth progress of their management work. After entry, regular continuous education and training should be carried out for managers. It is necessary to combine the training content with the current teaching situation and teaching content to improve the working ability of managers, so as to keep pace with the times. At the same time, it is necessary to strengthen the incentive mechanism for the cultivation of management talents in colleges and universities. Schools should encourage administrative staff to actively participate in training. High-achieving managers are offered opportunities to study abroad, and funding is provided to train them to apply what they have learned to their jobs. By benefiting managers, it can improve the efficiency of management work and promote the overall improvement of the professional quality of the management team.

This article delves into the two major challenges faced by counselors in higher vocational colleges: burnout and network security. Through the measurement of the MBI-GS scale, we found that counselors generally have problems such as emotional failure, negative attitudes, and low sense of accomplishment. This not only affects the mental health of counselors, but may also reduce their work efficiency, which has an indirect impact on student and campus safety. In addition, network security is also an issue that cannot be ignored. In the information age, counselors need to process a large amount of complex online information, while protecting students' privacy and information security, which undoubtedly increases their work pressure and forms a vicious circle with professional burnout.

In order to improve the network security awareness and skills of counselors and reduce their work pressure, we have proposed a series of intervention strategies. These strategies are designed to reduce network information overload and potential threats, thereby indirectly alleviating burnout. At the same time, we will also enhance the network security protection capabilities of counselors through training, system construction, etc., and enhance their sense of control and accomplishment in their work. Specifically, we can establish an efficient network security management system, provide regular network security training, and establish a rapid response mechanism to deal with possible network crises. In addition, it is also very necessary to provide psychological support and time management guidance to counselors. In short, by collecting and analyzing burnout data, we can find the root cause of the problem and evaluate the effect of intervention. On the other hand, network security intervention can improve the working environment, reduce the burden on counselors, and improve their sense of self-efficacy, thereby effectively alleviating professional burnout. These two aspects complement each other to jointly promote the healthy development of the counselor team and ensure the safety and stability of the campus network environment.

5. Conclusion

The research in this paper found that counselors in higher vocational colleges in our country generally face the problem of occupational burnout, and its causes are complex and diverse, and it is related to many factors such as individual psychology, work environment, and career development opportunities. In order to alleviate this problem, this article discusses a variety of strategies, especially emphasizing the importance of network security intervention in reducing the work pressure of counselors. At the same time, the research in this paper also indirectly points out the necessity of improving communication efficiency. Although the impact of physical fitness and hobbies on burnout has not been directly studied, in theory, good physical conditions and a wide range of interests can help improve work efficiency and personal stress resistance, which may help counselors better cope with work stress. Therefore, although there is a lack of direct data support, focusing on physical health and interest development can be regarded as an auxiliary strategy that helps to improve the overall well-being and work efficiency of counselors in a high-pressure work environment. Future research should further investigate the specific effects of these auxiliary factors in depth, and expand the sample size to improve the universality and application value of the research. Through these efforts, we will be able to more comprehensively understand the current situation of burnout among counselors in higher vocational colleges, and propose more scientific and specific interventions to improve their working environment and mental health.

This study has achieved results in measuring occupational burnout and network security intervention of counselors in higher vocational colleges, but there are still limitations. Although sample selection ensures diversity, geographical and professional restrictions may affect the universality of results. In the future, the sample range should be expanded to improve the external validity of the research. In addition, when using the MBI-GS scale to measure occupational burnout, it relies on the subjective reports of the subjects, which may be affected by the effects of social expectations, etc., and underestimate the actual degree of burnout. At the same time, the complexity of cybersecurity issues means that research may not fully cover all potential threats and challenges.

Future research should expand the sample scope to include higher vocational colleges in different regions, sizes and majors to enhance the universality of research. Hierarchical random sampling is used to ensure sample diversity and in-depth analysis of the differences in burnout among different groups. At the same time, conduct long-term follow-up surveys to understand the changes in occupational burnout and the long-term effects of network security interventions, and reveal the relationship between its development process and the external environment. Combine quantitative and qualitative research, such as in-depth interviews and case studies, to enrich data sources and obtain in-depth insights. These methods will make the research more comprehensive, overcome the limitations of the sample, provide scientific solutions to the problem of burnout among counselors in higher vocational colleges, and provide strong support for relevant policy formulation and practice.

Author contributions: Conceptualization, RD and NBAS; methodology, RD; software, RD; validation, RD, NBAS; formal analysis, RD; investigation, RD; resources, RD; data curation, RD; writing—original draft preparation, RD; writing—review and editing, RD; visualization, RD; supervision, RD; project administration, RD; funding acquisition, NBAS. All authors have read and agreed to the published version of the manuscript.

Acknowledgements: With an extensive 21-year tenure as a student counselor in vocational institutions, Rili Dang has adeptly initiated a dedicated counseling studio in Guangdong Province. Rili Dang has significantly contributed to the academic realm by authoring 12 scholarly articles on student counseling in CNKI and two research papers on counselor burnout in the Scopus journal. This profound experience and specialized knowledge have furnished critical insights and depth to this study, enabling a thorough exploration of occupational burnout among counselors in Guangdong's vocational colleges from both theoretical and empirical standpoints.

Conflicts of Interest: The authors declare no conflict of interest.

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