STUDY ON THE IMPACT OF THE CONSTRUCTION OF PUBLIC MANAGEMENT SYSTEM IN RURAL AREAS ON ALLEVIATING THE MENTAL PRESSURE OF RURAL RESIDENTS

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SUMMARY

Background: Different from urban areas, rural areas are more backward in culture and education, consumption level, life concept, transportation convenience and so on. The vast majority of rural public management functions are imperfect, especially in transportation, education, culture, medical and health affairs. The problems of public management in rural economic construction at this stage are unclear government functions, lack of rural public utility funds, lack of rural public management legal system and lack of rural public management talents.

Subjects and methods: 100 residents were selected as the research object to analyze the effect of the construction of public management system in rural areas on the mental stress of rural residents. The experimental period lasted for 6 months. This study used the expectation maximization algorithm (EM) to classify the improvement effect of mental stress. The evaluation indexes are depression, anxiety, fear and depression, and the evaluation indexes of improvement effect are no improvement, slight improvement, improvement and obvious improvement. The corresponding score values are 0-25, 26-50, 51-75 and 76-100 respectively.

Results: It can be seen from Table 1 that the four improvement strategies for the construction of public management system in rural areas can improve the mental pressure of rural residents, especially in the two aspects of depression and anxiety. This may be because the construction of public management system in different rural areas can ease the psychological anxiety of residents.

Conclusions: The public management system in rural areas needs to be placed in a key position in the new rural construction. The countryside, the market and the government need to jointly undertake the public management responsibilities, positioning farmers, the market and the government as participants, operators and guides respectively.

Key words: beautiful countryside - rural landscape - planning and design

INTRODUCTION

With the improvement of material living standards and the development of network information technology, as well as the increasingly fierce social competition, rural residents are facing increasing living burden, employment pressure and social communication pressure, which makes them easy to fall into bad emotions such as irritability, tension and anxiety (Fort 2021). As an important measure of Rural Revitalization Strategy, the construction of public management system in rural areas can improve the quality of public management through effective measures, which can not only protect farmers’ interests and improve farmers’ happiness index (Yoo 2019). Public management mainly refers to the legal interests of rural social things and rural residents, including transportation, social environment, education, culture, rural health and so on (Karen 2021). The reform of public utilities management service has high difficulty and complexity. By coordinating the management functions of various departments, it can realize the unity of public utilities and achieve the achievements of rural construction, so as to help rural residents obtain a balanced lifestyle of physical and mental health.

Katie scholars believe that through the extended communication on the Internet, many users have formed relationships with others online. The interaction of several aspects of Internet media makes the development process of online relations different from offline development. As far as psychological research is concerned, the Internet is still a rather unknown field, especially in the field of online relationship development (Katie 2018). Newby designed an experimental scheme to analyze the treatment of disease anxiety disorder and somatic symptom disorder by network-based cognitive behavior therapy and psychological education control. The results show that the proposed cognitive behavior therapy has practical value (Newby 2018). Pepper and other researchers analyzed the relationship among autism, early psychosis and social anxiety disorder, and expounded the role of social cognition and its relationship with young adult disability characterized by social disorder (Pepper 2018).

In the wave of urbanization, modernization and marketization, great changes are taking place in China’s rural areas, from production level to life level, from material level to spiritual level (Da 2020). The vast majority of rural residents will face all kinds of invisible pressure and different ideas from the times and society, which leads to their lack of excretion outlet of bad emotions and emotions, which is easy to produce psychological problems (Siew 2019). Different from the psychological problems of urban residents, the psychological problems of rural residents have not been widely concerned by the society (Ashar 2021). If the
mental pressure of rural residents is too great, their life and work will face many problems. When residents are faced with great mental pressure, they may have manic depression, depression, anxiety and other diseases. With the rapid development of national economy and the increasingly fierce market competition, people’s mental health problems appear more and more frequently, and the manifestations of mental problems of urban and rural residents are diverse (Rankin 2018). Different from the psychological problems caused by insomnia, high-intensity work and fast-paced life of urban residents, the mental pressure of rural residents is mainly manifested in the relationship between neighbors, cadres and the masses, the relationship between mother-in-law and daughter-in-law, etc. These problems are often hidden, but if the psychological problems exist for a long time and cannot be solved, it will develop into malignant events. In the process of social differentiation and market competition, frustrated and vulnerable people usually appear in rural areas, which will make these groups feel anxious, helpless, resentment and other negative emotions (Mennin 2018). Usually, if they are in a state of emotional tension, they will have physical and emotional diseases. At this stage, the most common intervention methods can alleviate mental tension, but the scope of application is greatly limited, and the implementation is difficult, the effect is poor, and the real-time performance is low. Therefore, their promotion value is not particularly great. According to Freud’s different understanding of anxiety, anxiety can be divided into four types: realistic anxiety, neurological anxiety and moral anxiety (George 2021). Panic response or similar panic response is sudden, and there is no obvious cause of stimulation. Phobia means that the degree of terror completely exceeds the degree of fear of things themselves. Terror has the characteristics of irrationality. Every kind of nervous terror can be attributed to the original desire of self for the things they fear.

Figure 1. Rural public management dilemma and countermeasures

Different from urban areas, rural areas are more backward in culture and education, consumption level, life concept, transportation convenience and so on. The vast majority of rural public management functions are imperfect, especially in transportation, education, culture, medical and health affairs. The problems of public management in rural economic construction at this stage are unclear government functions, lack of rural public utility funds, lack of rural public management legal system and lack of rural public management talents. With regard to the unclear functions of the government, at present, the basic administrative units in rural areas are mainly villages, and the staff of management departments at all levels have irresponsible behaviors such as mutual prevarication when performing administrative public management tasks. In addition, some public management decisions are not consistent with the actual situation in rural areas. Many decision-making departments do not really understand the real situation in rural areas. Some staff have weak service awareness and low personnel quality, which directly affects the harmony and stability of society and hinders the economic construction of new rural villages. For the lack of funds for rural public utilities, the economy of most rural areas in China lags behind seriously, and some regions are even the key targets of poverty alleviation. At this stage, there is a phenomenon of less investment and time in rural public utilities, which seriously affects the supply of daily needs such as water and electricity of rural residents. At the same time, the improvement of public facilities and equipment is low, the living conditions of farmers are low, the social and ecological environment in rural areas is poor, and the living standards of farmers cannot be substantially improved. For the legal system of rural public management, the basic legal system of public management in China has not been improved at this stage, and the interests of farmers cannot be fundamentally guaranteed in the actual implementation process. The rural market environment is relatively chaotic, and most enterprises are composed of farmers. It is easy to have conflicts of interest in actual business activities. The lack of public management system for supervision and intervention in the agricultural products trading market will lead to problems in the development of enterprises, which will not only seriously hinder the level of China’s economic construction, but also reduce the quality of life of farmers. For the lack of rural public management talents, the economic level of rural areas in China is low, which makes it difficult for professional public management talents to stay. Most college students who grow up from rural areas think that the development
prospect of rural areas is poor, and they prefer to stay in areas with more development prospects and higher economic level. At present, the public management talents in rural areas are older, which leads to their low acceptance of new things and no better management countermeasures and innovative measures.

Research data at home and abroad point out that the public management system in rural areas can solve the mental pressure of residents and aims to improve the overall health level of residents.

**SUBJECTS AND METHODS**

**Study setting**

The coping strategies for the plight of rural public management are as follows: optimize the functions of grass-roots government institutions, realize the diversification of public utilities, improve the legal system of public utilities management, and optimize the training and selection mode of rural talents, as shown in Figure 1. Government agencies need to share management information, take farmers’ service as the basic criterion, and give full play to the functions of the government in rural public management environment on the basis of ensuring the legitimate rights and interests of farmers. Public management departments should accelerate the reform and improve the work responsibility supervision system and personal responsibility system, so as to facilitate the broad masses of farmers to exercise the right of supervision, and then improve the sense of responsibility of management staff. China needs to strengthen the capital investment in public utilities and change the focus of capital investment from ecological construction in rural areas to social construction. The important content of public services is to maintain social order and provide the premise for the development of rural economic construction. The government needs to optimize cultural construction, educational environment, rural health conditions, farmers’ income and agricultural development, and use diversified public utilities to get rid of rural poverty and backward social phenomena. Establishing and improving public utilities management laws can put public management in place, use government functions to promote foreign enterprise investment and ensure the legitimate rights and interests of investors and farmers. On the one hand, we should make use of investment channels and enterprise management system to improve the public management system in rural areas. On the other hand, improve the public management system through the introduction of management talents and the actual situation of villages and towns. In order to optimize the training and selection mode of rural talents, we need to improve the comprehensive quality of rural cadres, improve the cultural level of existing cadre groups, and actively introduce excellent management talents. Under the background of new rural economic construction, it is necessary to optimize and improve rural dry economy.

The state can issue relevant incentive policies to improve the cultural level of the existing cadre groups, enrich management knowledge, actively introduce excellent management talents, and form a complete development chain of public management talents. First, strengthen the construction of talent leadership team. Carry out centralized training and management teaching for the existing rural grass-roots cadres and leaders, hire management experts or agricultural professionals to carry out management lectures or technical training, so that the grass-roots cadres and leaders can correctly understand the existing difficulties in rural areas. The leading cadres can learn advanced agricultural knowledge and technology, improve cultural level and experience, combine regional and geographical advantages, use science and technology to innovate rural public management services and improve the accuracy of decision-making. Secondly, we can strengthen the talent introduction system, implement intensive management for management talents with graduate education, and let talents implement intensive management for management talents with graduate education, so as to let talents enter the countryside and shine for rural economic construction and social development. Rural areas need to be highly educated. High quality management talents provide ways and channels of understanding, give such talents the opportunity to build and develop rural areas, enrich the original rural cadre team, and implement feasible and innovative strategies in health environment, education and teaching.

**Design**

In order to analyze the effect of the construction of public management system in rural areas on the mental stress of rural residents, SASD data statistical analysis software is used to analyze the effect of the construction of public management system in rural areas on the mental stress of rural residents. 100 residents were selected as the research object to analyze the effect of the construction of public management system in rural areas on the mental stress of rural residents. The experimental period lasted for 6 months. Table 1 refers to the basic information of the research object. This study used the expectation maximization algorithm (EM) to classify the improvement effect of mental stress. The evaluation indexes are depression, anxiety, fear and depression, and the evaluation indexes of improvement effect are no improvement, slight improvement, improvement and obvious improvement. The corresponding score values are 0-25, 26-50, 51-75 and 76-100 respectively. The improvement rate is the ratio of the number of people with slight improvement, improvement and obvious improvement to the total number of people. In order to avoid the influence of subjective factors on the research results, the data of all subjects were taken for analysis.
The construction of public management system in rural areas includes four aspects: optimizing the functions of grass-roots government institutions, realizing the diversification of public utilities, improving the legal system of public utilities management, and optimizing the training and selection mode of rural talents, which are expressed by strategy 1 - strategy 4 respectively. EM algorithm is an algorithm to find the maximum likelihood estimation or maximum a posteriori estimation of parameters in the probability model that depends on unobservable hidden variables. EM algorithm is a kind of optimization algorithm to realize maximum likelihood estimation through iteration. It is used to estimate the parameters of probability model containing hidden variables or missing data. EM algorithm and its improved version are used to solve the parameters of machine learning algorithms. Common unsupervised learning algorithms include Gaussian mixture model, probabilistic principal component analysis, hidden Markov model and so on. The standard calculation framework of EM algorithm consists of E-step and M-step alternately. The core idea of the algorithm is to indirectly optimize the objective function by optimizing the lower bound of the objective function. The EM algorithm is greatly affected by the initial value. The result cannot guarantee the global optimization, but it can guarantee the convergence to the stable point. In step e, what we do is to fix the value of model parameters and optimize the distribution of implicit data. In step m, what we do is fix the implicit data distribution and optimize the value of model parameters. The basic flow of EM algorithm is as follows: firstly, assume the implicit data (step e), and then maximize the log likelihood based on the observed data and the guessed implicit data to solve our model parameters (Step M). Because our previous hidden data is guessed, the reliability of the obtained data is low. Then, based on the currently obtained model parameters, continue to guess the hidden data, and then continue to maximize the log likelihood to solve our model parameters. Repeat the above steps for continuous iterative update until the distribution parameters of the model are basically unchanged, and finally obtain the convergence data of the algorithm and appropriate model parameters. The convergence of EM algorithm can only ensure local optimization, not global optimization. Therefore, the EM algorithm is usually randomly initialized and run many times, and the iterative output with the maximum log likelihood is selected. Because iterative rules are easy to implement and hidden variables can be considered flexibly, EM algorithm is widely used in data missing measurement processing and parameter estimation of many machines learning algorithms, including Gaussian mixture model and hidden Markov model. EM algorithm is characterized by stability, convergence and computational complexity. For the convergence of EM algorithm, EM algorithm converges the local maximum or saddle point of log likelihood. For numerical stability, EM algorithm can at least maintain the current optimization results and will not move in the opposite direction of the maximum. For computational complexity, when step e has analytical form, EM algorithm is an algorithm with low computational complexity and storage overhead, which can complete the calculation with very small computational resources. When step e does not have analytical form, EM algorithm needs to be combined with other numerical methods. Compared with other gradient algorithms such as Newton iterative method and random gradient descent, the advantage of EM algorithm is that its solution framework can add additional constraints on the solution goal. For example, in Gaussian mixture model, EM algorithm can ensure that the result of each iteration is a positive definite matrix when solving covariance. Set a sample consisting of (x₁,x₂,⋯,xₙ) , assuming that the products are divided into two categories: qualified and unqualified, and the probability of unknown unqualified products is p, the likelihood function of the sample is equation (1).

\[ f(X_1=x_1;p) = \prod_{i=1}^{n} p^{x_{i}} (1-p)^{1-x_{i}} \]  

(1)

In formula (1), random variable \( X \) refers to whether it is qualified, \( X = 0 \) refers to qualified and \( X = 1 \) refers to unqualified.

RESULTS

Firstly, the study analyzes the effects of the construction of four different public management systems in rural areas on Residents’ mental stress after the end of the six-month experimental cycle. The results are shown in Figure 2. From the improvement effect of mental stress, four improvement measures can improve the mental stress of rural residents: optimizing the functions of grass-roots government institutions, realizing the diversification of public utilities, perfecting the legal system of public utilities management, and optimizing the training and selection mode of rural talents, which are expressed by strategy 1 - strategy 4 respectively.
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The improvement rates of depression are 86.0%, 92.0%, 90.0% and 92.0% respectively. The improvement rates of anxiety were 85.0%, 88.0%, 89.0% and 91.0% respectively. The improvement rates of fear were 83.0%, 85.0%, 86.0% and 84.0% respectively. The improvement rates of depression were 84.0%, 83.0%, 82.0% and 86.0% respectively. This may be due to the effect of public management system construction on Residents’ mental stress in different rural areas.

The research then analyzes the impact of improvement measures on rural residents’ depression in the whole experimental cycle. The results are shown in Figure 3. One month after the implementation of the four improvement measures of optimizing the functions of grass-roots government institutions, realizing the diversification of public utilities, perfecting the legal system of public utilities management and optimizing the training and selection mode of rural talents, the corresponding improvement rates were 62.0%, 68.0%, 62.0% and 63.0% respectively. After two months of implementation, the corresponding improvement rates were 74.0%, 75.0%, 74.0% and 72.0% respectively. After 4 months of implementation, the corresponding improvement rates were 79.0%, 81.0%, 81.0% and 81.0% respectively. With the increase of experimental time, the improvement rate of the four improvement measures of optimizing the functions of grass-roots government institutions, realizing the diversification of public utilities, perfecting the legal system of public utilities management and optimizing the training and selection mode of rural talents gradually increases, mainly because the advance of time helps the public management system in rural areas to relieve the depressed emotions of residents.

The study then analyzed the impact of improvement measures on the anxiety of rural residents in the whole experimental cycle. The results are shown in Figure 4. After the implementation of the corresponding measures to optimize and improve the function of public institutions in rural areas, 62.0% and 66.0% respectively. After two months of implementation, the corresponding improvement rates were 73.0%, 77.0%, 74.0% and...
After 4 months of implementation, the corresponding improvement rates were 78.0%, 81.0%, 81.0% and 80.0% respectively. With the increase of experimental time, the improvement rate of the four improvement measures of optimizing the functions of grass-roots government institutions, realizing the diversification of public utilities, perfecting the legal system of public utilities management and optimizing the training and selection mode of rural talents gradually increases, mainly because the advance of time helps the public management system in rural areas to relieve the depressed emotions of residents.

**CONCLUSIONS**

The mental stress of rural residents is the main problem of rural public management. Aiming at the current problems of rural public management system, this paper puts forward a rural public management system including four improvement strategies, and analyzes its effect on the mental pressure of rural residents. The results show that optimizing the functions of grass-roots government institutions, realizing the diversification of public utilities, perfecting the legal system of public utilities management and optimizing the training and selection mode of rural talents can improve the mental pressure of rural residents, and the improvement rates of depression are 86.0%, 92.0%, 90.0% and 92.0% respectively. The improvement rates of anxiety were 85.0%, 88.0%, 89.0% and 91.0% respectively. The improvement rates of fear were 83.0%, 85.0%, 86.0% and 84.0% respectively. The improvement rates of depression were 84.0%, 83.0%, 82.0% and 86.0% respectively. The rural public management system proposed in the study can improve the mental pressure of rural residents.

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**Conflict of interest:** None to declare.

**Contribution of individual authors:**
Aishui Yu: conception and design of the manuscript and interpretation of data, literature searches and analyses, clinical evaluations, manuscript preparation and writing the paper;
Deshui Yu: made substantial contributions to conception and design, literature searches and analyses, participated in revising the article and gave final approval of the version to be submitted.

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RESEARCH ON REFLECTIVE PRACTICAL MUSIC EDUCATION FOR CHILDREN WITH CONGENITAL MEMORY IMPAIRMENT

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SUMMARY

Background: Reflective practical education is a practical teaching based on summarizing educational problems and considering children’s actual situation and existing teaching forms. This educational model can achieve ideal teaching results. The specific functions of reflective practical teaching are as follows, which can stimulate children’s innovative consciousness, improve children’s spiritual literacy and increase children’s learning enthusiasm.

Subjects and methods: 400 children with congenital memory impairment were selected as the research object to analyze the effect of reflective practical music education on children with congenital memory impairment. The improvement of children’s memory impairment was analyzed by K-means clustering algorithm for grade evaluation. Congenital memory impairment is divided into six types: memory enhancement, memory decline, forgetting, misconstruction, fiction and latent memory, and four reflective practical music education strategies: clarifying the design form of music teaching, determining reflective teaching objectives, innovating teaching system and expanding knowledge content, which are expressed by strategy 1-strategy 4 respectively. The evaluation grade quantifies the degree of improvement through five grades 1-5. 1 indicates no improvement, 2 indicates slight improvement, 3 indicates improvement, 4 indicates significant improvement and 5 indicates serious improvement.

Results: The four reflective practical music education strategies can improve six kinds of children’s memory disorders, especially clarify the form of music teaching design and determine the reflective teaching objectives.

Conclusions: Four reflective practical music education strategies can improve six kinds of children’s memory disorders, especially clarifying the form of music teaching design and determining the reflective teaching goal.

Key words: congenital memory impairment - children - reflective music education

INTRODUCTION

Congenital memory impairment refers to the impairment of related functions and even disorders caused by the imperfect development of brain tissue in the early stage of hair and brain development (Fernández-Alarcón 2020). Acquired memory impairment refers to the patient’s memory function is affected by trauma, or the brain center is temporarily damaged due to external stimulation, which will lead to the operation failure of brain tissue in the memory area (Perrotta 2020). According to different clinical manifestations, memory impairment can be divided into six types: memory enhancement, memory decline, forgetting, misconstruction, fiction and latent memory. Congenital memory impairment in children is a common disease that puzzles clinicians (Hieu 2020). At present, there is no active and effective treatment. Some studies believe that reflective practical music education can improve children’s congenital memory impairment.

Hazen m and other scholars believe that memory impairment refers to the state that individuals cannot recall and remember information and knowledge, which may be temporary or permanent memory impairment caused by pathological, physiological, situational and other reasons (Hazen 2020). Yilai and other researchers analyzed the mechanism of neurological damage, and the research results provided help for the treatment of patients with clinical neurological dysfunction (Mendonça & Lima 2018).

Memory impairment refers to a state in which an individual is unable to recall and remember information and knowledge, which may be a temporary or permanent memory impairment caused by pathological, physiological, situational and other reasons. Memory includes memorization, retention and reproduction, which is closely related to neuropsychological function. According to neurophysiological and biochemical research, memory can be divided into three types: common sense memory, short-term memory and instantaneous memory (Yilai 2019). Akrh Mendon and other researchers analyzed the mechanism of neurological damage, and the research results provided help for the treatment of patients with clinical neurological dysfunction (Mendonça & Lima 2018).

Memory impairment refers to a state in which an individual is unable to recall and remember information and knowledge, which may be a temporary or permanent memory impairment caused by pathological, physiological, situational and other reasons. Memory includes memorization, retention and reproduction, which is closely related to neuropsychological function. According to neurophysiological and biochemical research, memory can be divided into three types: common sense memory, short-term memory and instantaneous memory (Hasegawa 2018). Memory and forgetting complement each other, and forgetting has selectivity and time regularity. According to the causes, memory impairment can be divided into congenital memory impairment and acquired memory impairment (Wang 2018). Congenital memory impairment refers to the impairment of related functions and even disorders caused by the imperfect development of brain tissue in the early stage of hair and brain development. Acquired