

LHMM23001 ALPHA-PINENE INHIBITS BIOFILM FORMATION AND VIRULENCE-FACTOR EXPRESSION OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS

Yang Yang^a, Young-Hoi Kim^b, Kang-Ju Kim^c, Yong-Ouk You^d

^a School of Agronomy and Life Sciences, Datong University, Datong, Shanxi, 037009, China, ^b Department of Food Science, Chonbuk National University, Jeonju, Jeonbuk, 54896, Republic of Korea, ^c Department of Oral Microbiology, Wonkwang University, Iksan, Jeonbuk, 54538, Republic of Korea, ^d Department of Oral Biochemistry, Wonkwang University, Iksan, Jeonbuk, 54538, Republic of Korea.

Background: Methicillin-resistant *Staphylococcus aureus* (MRSA) is a typical antibiotic-resistant bacteria and it is a leading cause of nosocomial infections worldwide. *Staphylococcus aureus* is an extracellular bacterium that causes surface to severe hematogenous infections with high infection rate and mortality. Thus, novel antibiotics are urgently required to treat these bacteria. Essential oils (EOs) showed the antibacterial activity and has become the basis of many applications, including alternative medicine, natural therapies, food preservation, raw and processed, and pharmaceuticals. Natural products with EOs can be made use of as raw materials in antibacterial substances.

Subjects and Methods: In this study, the α -pinene is a major compound of *Pinus densiflora* Sieb. et Zucc. (PSZ) EOs. The antibacterial activity of the essential oil extracted from PSZ against MRSA was investigated. The inhibitory effect of α -pinene on MRSA growth, acid production, biofilm formation and expression of virulence factors were examined.

Results: PSZ EO was analyzed by gas chromatography (GC) and GC coupled for mass spectrometry, which identified 58 constituents, accounting to 90.98% of the total EO. The most components in all the EOs is α -pinene (20.56%). At concentrations of higher than 0.25 mg/mL ($p < 0.05$), the α -pinene was examined to inhibit the growth of MRSA. After using the safranin staining method, α -pinene showed an inhibitory effect against biofilm formation. As well as the experimental results were similar to the scanning electron microscopy. At high concentrations with α -pinene in a concentration dependent manner (of 1–8 mg/mL) also showed a bactericidal effect by the confocal microscopy. According to the real-time polymerase chain reaction, mRNA expression of virulence factor genes, *sea*, *agrA*, *mecA*, and *sarA*, was observed. All the expression was observed at a concentration of 0.25 mg/mL by α -pinene.

Conclusions: These results suggest that α -pinene, a major compound of PSZ EOs, has the antibacterial activity against MRSA, antibiotic resistant bacteria.

Acknowledgments

This paper was supported by Wonkwang University in 2019.

LHMM23002 ANALYSIS OF 12 CASES OF FEVER AFTER MODIFIED ELECTROCONVULSIVE THERAPY

Cunbo Wu^a

^a Chongqing Mental Health Center, Gele Mountain, Shapingba district, Chongqing, China.

Objective: To investigate whether modified electroconvulsive therapy (MECT) causes fever and its causes and feature.

Methods: In accordance with the inclusion and exclusion criteria, Data analysis was conducted on 12 patients with mental disorders who were treated with modified electroconvulsive fever after treatment from February to May 2022 at chongqing Mental Health Center.

Results: Fever is more common in adolescents after MECT treatment, 4 persons under the age of 20, accounting for 33.3%; 5 persons aged 20–29, accounting for 41.7%; mainly with moderate fever, 7 cases (58.3%), usually occurs in the second time of MECT (50%) and in that afternoon of the day after operation, 11 cases (91.6%). One case was fever after the third time, accounting for 10%; Two cases (20%) developed fever after the eighth MECT. 4 cases (33, 3%) had normal blood routine after MECT. 8 cases (66.7%) had elevated WBC. 4 cases (33.3%) showed normal CRP during fever after MECT. CRP was elevated in 8 cases (66.7%). Among the patients with fever, there were 5 females (41.7%) and 7 males (58.3%). 9 cases (75%) of febrile patients were schizophrenic. 2 cases of affective disorder (16.7%); 1 case (8.3%).

Conclusions: The fever caused by MECT should not be ignored and should be treated promptly. Relevant auxiliary examination should be

improved to clarify the cause and further treatment. MECT treatment should be suspended if necessary.

LHMM23003 CLINICAL EVALUATION AND ANTIBIOTIC SELECTION TO TREAT STAPHYLOCOCCUS AUREUS INDUCED INFECTIVE ENDOCARDITIS IN CHILDREN

Xin Guo^a, Bing Hu^a, Qinqing Li^a, Linlin Liu^a, Zhenzhen Dou^a, Zhihui Zhao^b, Liang Zhu^a, Tianming Chen^a, Lingyun Guo^a, Gang Liu^a

^a Key Laboratory of Major Diseases in Children, Ministry of Education, Department of Infectious Diseases, Beijing Children's Hospital, Capital Medical University, National Center for Children's Health, Beijing, 100045, China, ^b Department of Heart Diseases, Beijing Children's Hospital, Capital Medical University, National Center for Children's Health, Beijing, 100045, China.

Background: Infective endocarditis (IE) is a rare and fatal disease in children, with *Staphylococcus aureus* (SA) as the leading cause in many regions of the world. *Staphylococcus aureus* infective endocarditis (SAIE) often presents sudden onset of sepsis and embolism, with multiple organs damage. SAIE with persistent bacteremia is a challenge in clinical practice. Some specific antibiotics such as daptomycin are available as an alternative when conventional treatment fail.

Subjects and Methods: The research team retrospectively analyzed the medical records of 7 pediatric patients with infective endocarditis caused by *Staphylococcus aureus* admitted to Beijing Children's Hospital from February 1, 2018 to February 28, 2021. The etiology, symptoms and signs, laboratory results, treatment and prognosis were collected, and compared with 13 other cases. Blood culture and echocardiography were used to diagnose the disease, and the efficacy of different antibiotics was analyzed.

Results: SAIE accounted for 35% (7/20) of all IE patients, with 7 cases ranging in age from 1 year 5 months to 13 years 8 months. 3 cases (42.9%) had methicillin-resistant *Staphylococcus aureus* (MRSA) and 4 cases (57.1%) were methicillin-sensitive *Staphylococcus aureus* (MSSA). A total of 4 cases (57.1%) had congenital heart disease. All patients (100%) had fever and 3 cases (42.9%) had major vessel embolic events. 4 cases (57.1%) had central nervous system complications and 4 cases left heart endocarditis. All patients initially received vancomycin-based treatment regimens. 2 cases (28.6%) with persistent bacteremia were changed to a 9 mg/kg/dose of daptomycin when the conventional treatment failed to vancomycin therapy. The outcomes were good and no significant side effects occurred. Daptomycin in our study was first applied successfully for SAIE with persistent bacteremia in Chinese children.

Conclusions: SA was the common major pathogen detected in IE. Appropriate antibiotic therapy needs to be adopted, and evaluation of persistent bacteremia and vascular embolic events is needed. The study also showed that vancomycin and linezolid are still the first-line choices for treatment of the disease, but daptomycin can also be an effective treatment option.

Acknowledgments

The authors would like to thank Huiyu Liu's writing support from MSD, Qinqing Li and Tianming Chen's support during the conduction of this study.

LHMM23004 THERAPIUTIC EFFECT ANALYSIS OF JIAO'S THE SCALP ACUPUNCTURE COMBINED WITH TASK-ORIENTED TRAINING ON MOTOR FUNCTION OF CHILDREN WITH SPASTIC CEREBRAL PALSY

Xiaosu Jie^a, Lin Niu^b, Haijun Shan^a, Caihong Cao^a, Yingying Zhang^a, Yujin Hou^a

^a Child Rehabilitation Department, Henan Province Hospital of Traditional Chinese Medicine, Zhengzhou, China, ^b Department of medical technology, Zhengzhou Railway Vocational and Technical College, Zhengzhou, China.

Background: This study analyzed the effects of Jiao's scalp acupuncture combined with task-oriented training on gross motor function classification, gross motor function assessment and motor development of children with spastic cerebral palsy. Spastic cerebral palsy is the most common type of cerebral palsy with motor dysfunction among the main clinical manifestations. Even the severe patients can not walk for life. So exercise intervention is the focus of cerebral palsy treatment. This study

activities, and strategies, and create innovations to provide sufficient intrinsic and extrinsic motivation to excel and improve their academic achievement and attain quality and relevant education during the pandemic.

Acknowledgments

This work is supported by Guangxi Natural Science Foundation Project (2020GXNSFAA159172, 2021GXNSFBA220023) and Research Basic Ability Improvement Project for Young and Middle-aged Teachers of Guangxi Universities (2023KY0633, 2021KY0604).

LHMM23226 EFFECTS OF RURAL TOURISM ON MENTAL HEALTH OF TOURISTS OF DIFFERENT AGES: A CASE STUDY OF SHAANXI PROVINCE, CHINA

Jing Zhao^{a,b,c}, Peiyun Guo^a, Linbo Zhu^a

^a Institute of Human Geography, School of Tourism, Xi'an International Studies University, Xi'an 710128, China, ^bShaanxi Tourism Research Institute, Xi'an International Studies University, Xi'an 710128, China, ^c Research Center for Tourism Cooperation and People-to-people Exchange among SCO Nations, Xi'an International Studies University, Xi'an 710128, China.

Background: Growing volume of research suggests mental health benefits of natural environments. Psychological needs and motivations of tourists of different age groups and how to promote mental health of tourists remain relatively unexplored. This research was aimed to examine association between rural tourism and mental health among tourists of different age groups.

Subjects and Methods: Analyzing psychological needs and features of tourists of different ages, this study constructed a table to summarize. In addition, this research analyzed the existing resources of rural tourism in Shaanxi, China, and explored how to use these resources to meet the different psychological needs of tourists, relieve their psychological anxiety, and promote their mental health.

Results: Rural tourism can promote the mental health of tourists of different ages. Adolescents face a variety of pressures, such as difficulties of interpersonal communication, heavy academic burden, excessive expectations of parents and so on, which can trigger psychological anxiety of varying degrees. Middle-aged people bear the pressure from emotion, home, work, and physical health, in the face of high-intensity work tasks in the workplace, at the same time, bear the responsibility to take care of the elderly and children in the family, is the most anxious stage of life. Unlike adolescents and middle-aged people, loneliness may cause anxiety for elderly people, especially empty-nesters who live alone. Different types of rural tourism can meet different psychological needs. Wildlife tourism can meet psychological needs of seeking novelty and knowledge of tourists. Living in the countryside with beautiful scenery, tourists can experience the natural, simple and sincere lifestyle and cultural expression of the countryside, and meet the nostalgia psychological needs. Forest tourism can enable tourists to appreciate natural scenery, enjoy quiet time, relax in fresh air, relieve the pressure of life, and promote mental health of tourists.

Conclusions: People of different ages groups in modern society are under great pressure and prone to psychological anxiety. The natural environment, wild animals and homestays in rural areas can meet the psychological needs of tourists from different angles, so that tourists can obtain happiness and satisfaction, produce a positive tourism experiences, and promote the mental health of tourists.

Acknowledgements

This research was supported by the Innovation Capability Support Program of Shaanxi (Program No.2022KRM038), Shaanxi Higher Education Teaching Reform Research Project (No.21BY092), Research and Practice Project on Comprehensive Reform of Postgraduate Education of Xi'an International Studies University (No. 22XWYJGA08). The authors also wish to thank the editor and the reviewer for their valuable comments.

LHMM23227 RESEARCH ON THE PATH OF INFANT CARE AND NURSING FRIENDLY SERVICE UNDER INTEGRATED SERVICE MODEL

Juanmiao Shi^a

^a Department of Social Work, Zhejiang University of Finance Economics Dongfang College, Jiaxing 314000, China.

Background: With the development of the infant care service industry, all sectors of society gradually focus on how to create a friendly environment for infants and children. Especially the concept of "child-friendly community" advocated in recent years, all sectors of society gradually focus on how to create a friendly environment for infants and children.

The independent infant care service model cannot fundamentally solve the parenting pressure of young families and solve the problem of gradually decreasing child ratio. An appropriate service model is urgently needed to relieve the physical and mental pressure of infant families, promoting the healthy growth of infants and their family members. This study combined with the social organization in the process of service integration community resources to assist the practice of infant family nursery demand experience, put forward the appropriate infant nursery service intervention path-integrated service mode.

Subjects and Methods: Selecting "z" social organization as research object, this paper expounds how "z" social organization integrates resources of community health service centers, voluntary service organizations and other community social organizations to provide physical, psychological and social services for infants in the community, so as to promote the healthy growth of infants and young children.

Results: In this study, social organizations provide services for infants relying on child-friendly community platforms, and an integrated service model suitable for infant care needs is proposed. The integrated infants nursery care model mainly takes baby-friendly service projects as samples, integrates the resource advantages of women's federations, grassroots civil affairs departments, medical and health organizations and medical volunteers, provides social support for infants in the community, and creates a child-friendly community atmosphere of "system-friendly, environment-friendly and service-friendly", responding to the needs of infants and families and promoting the healthy growth of infants.

Conclusions: According to the practical experience of social organizations using the integrated service mode to provide services for infants in the community, it is concluded that the integrated service mode has realized the needs of infants in the community to a certain extent, and according to the practical experience of the integrated service mode, it clarifies the roles and tasks of each resource subject in the infant care and nursing. The integrated service model of infant service plays an important role in the healthy development of infant's physical, psychological and social ability.

Acknowledgments

This work was supported by a project grant from the 2021 Philosophy and Social Science Planning project of Zhejiang Province "Research on the Improvement of Children's Psychosocial Ability from the Perspective of Community Governance- -Taking the Children's Friendly (Grant No.21NDQN301YB), 2023 Zhejiang Province Civil Policy Theory Research Project "Research on the Path of Social Organizations Participating in Children Friendly Services from the Perspective of Community Governance" (Project No.: ZMKT202388) and the key topics of Zhejiang University of Finance Economics Dongfang College "Research on the Construction of Early Development Service System of 0-3 Year Old Children in Zhejiang Province"(Grant No.2020dfy001).

LHMM23228 THE INFLUENCE OF EMPLOYEE EMOTIONAL BEHAVIOR AND SYSTEM FACTORS ON THE ORGANIZATIONAL EFFICIENCY OF TROUSER AUTOMATIC HANGING SYSTEM

Yarui Huo^a, Faridah binti Sahari^a

^a Faculty of Applied and Creative Arts, Universiti Malaysia Sarawak, Sarawak, Malaysia.

Background: The trouser production industry is in the transformation and upgrading of the attack period. Intelligent manufacturing is an important strategic direction for the transformation and upgrading of China's manufacturing industry, the emotional behavior of employees affects the organizational efficiency of the trouser production line, and the study of organizational efficiency is the core of automated production in the face of the new pattern of industry development, the trouser production line managers fully consider the emotional behavior of employees, the introduction of automated equipment to help improve the organizational efficiency of the production line it is imperative to do so.

Subjects and Methods: This paper explores the factors influencing the introduction of an automated hanging system in trouser production lines in four dimensions: employee emotional behavior, i.e., intention to use, user satisfaction, and system quality and organizational efficiency, and constructs a theoretical model of organizational efficiency of an automated transfer hanging system. This study was conducted with 268 front-line employees in a Chinese trouser manufacturing company and analyzed by structural equation modeling (SEM).

Results: The results showed that (i) system quality had a significant positive effect on employees' emotional behavior, i.e., intention to use and user satisfaction; (ii) user satisfaction had a significant positive effect

on intention to use. (iii) Employee's emotional behavior, i.e., intention to use and user satisfaction, positively affects organizational efficiency. **Conclusions:** This study addresses the results of the study, fully considers the direct and positive impact of employees' emotional behavior on the organizational efficiency of the automatic hanging system, and puts forward practical and feasible guiding suggestions for trouser manufacturing enterprises to introduce automated equipment and enhance their automation and intelligent development capabilities based on meeting employees' emotional needs.

LHMM23229 APPLICATION OF COGNITIVE THERAPY IN REHABILITATION TREATMENT AND NURSING OF DEPRESSION IN ADOLESCENTS IN ETHNIC REGIONS

Xiaolan Huang^{a,b}, Deying Lin^a, Zhaomin Sang^a, Xin Zhang^a, Jinhua Wu^a, Luxiang Hou^a

^a Department of Psychology, Third Affiliated Hospital of Guizhou Medical University, Duiyun 558000, Guizhou China, ^b School of Nursing, Guizhou Medical University, Guiyang 550000, Guizhou, China.

Background: To study the positive effect of cognitive therapy in rehabilitation treatment and nursing of depression in adolescents in the southern ethnic regions of Guizhou.

Subjects and Methods: 1. The study subjects were adolescents with depression who were officially admitted to our hospital for rehabilitation treatment in the southern ethnic regions of Guizhou from July 2020 to May 2022. 2. They were randomly divided into a clinical pathology research experimental group (referred to as the experimental group) and a clinical pathology control group (referred to as the control group). The control group was given symptomatic conventional drug treatment and routine nursing measures for psychiatric and psychological departments; while the experimental group was given cognitive therapy intervention on the basis of the conventional rehabilitation treatment and nursing measures of the control group. The Hamilton Depression Scale (HAMD) scores of the two groups of depressed patients before and after the intervention were compared. 3. Firstly, analyze and study the gender, age, education level, ethnicity, living environment, and other factors of the control group and experimental group of adolescent depression. 4. Use SPSS 21.0 statistical software for statistical analysis and data processing. The basic data is presented as mean \pm standard deviation. Single-factor ANOVA test and post-hoc multiple comparisons (LSD method) are used for statistical analysis of the experimental and control groups.

Results: The research results show that: 1. Adolescent depression is mainly concentrated in female Bouyei ethnic middle school students in rural areas. This is mainly due to the lack of care from parents for their female children while working outside the home. This should be highly valued by the school, society, and family, and proper care and frustration education should be given to left-behind children to enhance the life confidence and ability to withstand pressure of female students. 2. After rehabilitation treatment intervention, the HAMD scores of the experimental group were significantly reduced compared to those of the control group. The clinical comprehensive evaluation index was significantly better in the experimental group compared to the control group, and the difference had important clinical statistical guidance significance ($P < 0.05$).

Conclusion: In the rehabilitation treatment and nursing of depression in adolescents in the southern ethnic regions of Guizhou, cognitive therapy can be effectively applied to improve the degree of depression and enhance the ability of emotional self-control. It is worth promoting in the clinical rehabilitation treatment and nursing of depression in adolescents.

Acknowledgments

This research was supported by:

- 2020 Special Scientific Research Project of Nursing Discipline of Guizhou Medical University (Project No. YJ20070);
- 2023 Science and Technology Fund Project of Guizhou Provincial Health Commission (Project No. gzwkj2023-146).

LHMM23230 THE INFLUENCE MECHANISM OF SOCIAL MEDIA ON THE COMMUNICATION OF AGRICULTURAL BRANDS AND THE PSYCHOLOGICAL NEEDS OF PRACTITIONERS: AN EXPLORATION BASED ON GROUNDED THEORY

Zhichao Song^a, Wenlu Wei^b

^a School of Economics and Management, North China University of Technology, Beijing 100000, China, ^b School of Communication, Welfang University, Welfang 261000, China.

Background: With the development and maturity of social media power, the influence of social media on the communication effect of agricultural brands is becoming increasingly apparent. Relevant practitioners feel more pressure on how to meet the psychological needs in the competition of the new industry. Some pathological competition also affects the psychological health of practitioners, such as disorderly competition and industry anxiety. The industry and society need to find answers to the problems based on development to meet individual psychological needs, solve industry pathologies, and sustainable development of agricultural brands. Research on the mechanism of agricultural products' brand communication in the social media environment will be one of the solutions. It is a generalization and summary of communication methods and effects, and a universal and replicable communication mechanism is refined based on communication practice, which can also meet psychological needs, solve anxiety problems and protect psychological health.

Subjects and Methods: This article uses grounded theory and coding analysis through theoretical studies, policies, news, activity reports, and in-depth interviews on the communication of agricultural brands on various social media platforms. Through the coding analysis, the research finds the causes of industry anxiety, the conditions to meet psychological needs, and the solution ideas of pathological competition, and the article constructs a model of the influence mechanism of social media on the communication of agricultural brands.

Results: Based on grounded theory, this paper sorted out 58 open codes, 26 spindle codes, and six selective codes in interviews and data screening. This paper describes and analyzes the selective codes, and the extensive data ensures the rigor and credibility of the result sources. Finally, it proposes a mechanism for agricultural brand communication that satisfies psychological needs and alleviates industry anxiety.

Conclusions: Research and analysis based on grounded theory show that the influence mechanism of social media on agricultural brand communication will effectively meet psychological needs, relieve industry anxiety and improve mental health. This requires government authorities, industry associations or enterprises, and brand users to think and discuss various aspects when formulating communication strategies and developing more three-dimensional communication strategies to realize the benefits of transformation of agricultural brand communication and ultimately help the industry and practitioners to grow healthily and sustainably.

LHMM23231 A PRINCIPLE SUBMATRIX ALGORITHM FOR MEDICAL ASSIGNMENT PROBLEM

Zhitao Xiao^a

^a Department of General Education, Guangzhou Huali College, Guangzhou 511325, China.

Background: With the progress of society and the development of medical technology, people need to integrate a large amount of medical resources, allocate medical tasks reasonably, and achieve higher efficiency and less wastage in completing tasks. This article presents a principle submatrix algorithm for the assignment problem where the number of medical tasks exceeds the number of people.

Subjects and Methods: Firstly, we present the theory of same solution transformation for n persons and kn tasks assignment problems, followed by a principle submatrix algorithm for this type of problem. Then, we transform the medical assignment problem with more tasks than the number of people into a n persons and kn tasks assignment problem with the same solution, and finally use the principle submatrix method to find the optimal assignment of the problem. The characteristic of this principle submatrix algorithm is that it does not need to consider the overall assignment matrix of the assignment problem, only needs to perform operations locally on the assignment matrix, starting from the first order principle submatrix, and finding the optimal assignment of the problem step by step in a regular manner.

Results: For medical assignment problems with more tasks than the number of people, we do not need to transform it into a balanced assignment problem where the number of tasks equals the number of people, this assignment problem is first transformed into an n persons and kn tasks assignment problem with the same solution, and then the principle submatrix algorithm is used to obtain the optimal allocation of the original medical assignment problem. The principle submatrix algorithm for this medical assignment problems with more tasks than