27 RESEARCH ON M-HEALTH PURCHASING INTENTION

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Objectives The internet and the pharmaceutical industry have been a focus of interest in recent years. This study constructs a model of mobile medical risk and patients' willingness to use mobile medicine (Figure 1), conducts a feasibility analysis of the pharmaceutical industry carrying out remote medical services and puts forward suggestions for mobile medical pharmaceutical industry development.
Methods A sample was selected and control variable data were gathered by questionnaire and a web-based survey. A Likert scale was used and the effective sample size was 321. Reliability and validity analysis showed average variance extracted (AVE) values were >0.5, and composite reliability (CR) values were >0.7. Lisrel 8.7 was used to test each hypothesis.
Results Sample data supported all assumptions. Trust and perceived benefits (PB) were positively correlated, while trust and perceived risk (PR) were negatively correlated. Patients' standard of education had a direct effect on PB and PR. Patients' attitudes towards mobile medical treatment affected PB and negatively influenced PR. PB has a positive effect on intention, while PR has a negative impact on intention.
Conclusions The target group for mobile medical services should have online shopping experience and knowledge of the type of patients, while product development for patients of different ages should to focus on patients' needs and protection of their privacy.
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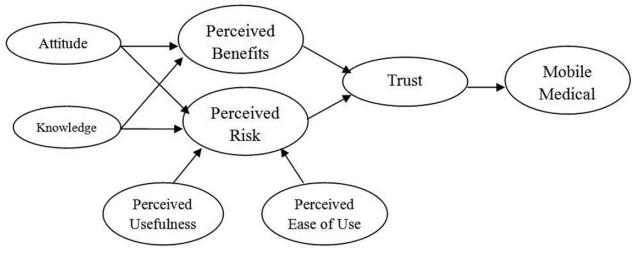

Abstract 27 Figure 1 Mobile medical risk and patients' willingness model

28 RESEARCH ON THE OPTIMIZATION OF LOGISTICS IN PHARMACEUTICAL ENTERPRISES

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Objective In order to establish a drug supply security system standard and meet the management system need of drug circulation enterprises, we studied the pharmaceutical distribution optimization problem to reduce the cost of medicine circulation and improve the efficiency of the pharmaceutical supply chain, which includes analysis of the requirements of the hospital market, forecasts and the location of the pharmaceutical distribution centre.
Methods An ELSON location model based on flow is constructed to quantitatively analyze the relationship between logistics and non-logistics elements of the drug distribution centre. A method based on linear tables and a process to determine the distribution centre of the pharmaceutical distribution unit is proposed. The EIQ analyzis method is proposed to analyze the number of drugs and the rules of mining.
Results The results show that the trends in efficiency and stability were roughly stable after the proposed quantum ant swarm algorithm was executed 100 times, but the trends fluctuated more when the other three algorithms were used. The solutions were also better with the other algorithms.
Conclusions This research provides theoretical support and guidance for the optimization and management of the logistics systems of pharmaceutical distribution enterprises, which can effectively reduce the cost and improve the efficiency of medicine circulation.
Acknowledgments This research was financially supported by the Scientific Research Project of Liaoning Province Education Department, China (Grant No. L2014183), the National Natural Science Foundation, China (Grant No. 51579024) and the Dr Scientific Research Fund of Liaoning Province (Grant No. 201601244).

29 TABLET FORM AND COLOR DESIGN METHOD BASED ON SUPPORT VECTOR REGRESSION AND SWARM INTELLIGENCE

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Objectives The emotional effect of a tablet's form and color on patients can affect their choice of drug, and their confidence in the effect of treatment. In order to improve the drug's treatment effect, it is necessary to design the tablet's form and color to meet the patients' emotional needs. This paper proposes a method for designing the form and color of tablets based on support vector regression and a swarm intelligence algorithm.
Methods First, the method decomposes the design elements of the tablet, and assigns category labels and fuzzy affiliation values to tablet samples in order to build the classification model. The patients' perceptions of tablet samples can be obtained through their subjective evaluation. The mapping model between design elements and patients' perceptual images can then be built using a support vector regression model. Finally, the design scheme is optimized using a swarm intelligence algorithm.
Results The proposed method can assist designers to quickly identify a satisfying design scheme despite limited options, and can increase the success rate of tablet design and improve treatment effect.
Conclusions The proposed method can effectively produce a satisfying design scheme while accounting for different image preferences caused by individual differences. Therefore, this method can provide a valid approach for large-scale design and theoretical support for tablet design.

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30 STUDY ON BLOOD DYNAMIC VISCOSITY IN ARTERIES VIA CFD

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Objectives Blood is a typical non-Newtonian fluid, and poor fluidity of blood is key to the pathogenesis of thrombus. The dynamic viscosity (high blood viscosity) of blood is a key factor in blood vessel embolization, especially cardiovascular and cerebrovascular embolisms. Computational fluid dynamics (CFD) is an efficient method for Newtonian or non-Newtonian fluid flow simulation. The finite volume method (FVM) is also an efficient numerical method for fluid dynamics simulation. This study aimed to investigate blood flow characteristics in arteries, and the dynamic viscosity is taken into account via the non-Newtonian fluids and CFD theory.
Methods A series of numerical computations are presented to reproduce the process of blood flowing in arteries using the FVM code CFX. Blood flow simulation will be accelerated using the GPU parallel computation scheme with the CUDA-enabled GPU coprocessor.
Results The dynamic viscosity and flow field of blood will be computed and shown by the contours. The velocity, shear strain rate and dynamic viscosity of blood can be calculated and monitored for different ages of people.
Conclusions The dynamic viscosity and flow characteristics of blood in arteries can be reproduced using CFD and FVM. The mechanism of blood vessel embolization can be analyzed via the non-Newtonian fluids and CFD theory. Thrombus occurs when the rheology of blood is enhanced.
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31 PATENT BIBLIOMETRIC ANALYSIS OF BIO/PHARMA COLD-CHAIN LOGISTICS IN CHINA

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Objectives Our objectives are to study the development and historical evolution of the bio/pharma cold-chain logistics industry in China. Bio/pharma cold-chain logistics has attracted a large number of scholars whose research has resulted in patents. Cold-chain modes like cold-chain transportation, cold-chain circulation, low temperature and multi-modal transportation have played an important role in bio/pharma cold-chain logistics. The implementation of cold-chain logistics also guarantees that the bio/pharma will always be kept at a low temperature state during the circulation process. The highlighted issues of drug safety make this more important. Statistically, the rates of cold-chain circulation and cold-chain transportation in China are 20% and 30%, compared to more than 90% in developed countries. Therefore, it is necessary for scholars to carry out scientific research on cold-chain logistics.
Methods A scientific literature database including a patent information services platform was used. Data visualization methods such as a patent management map, quantitative methods and bibliometrics were used to study patents.
Results The results revealed that the bio/pharma literature and cold-chain logistics technologies have increased substantially. Institutes and universities are the main forces behind basic research, and bio/pharma enterprises have begun to focus on intellectual property protection and technological innovation.
Conclusions Institutes and enterprises should be encouraged to carry out cooperative research on bio/pharma cold-chain logistics, to promote cold-chain resource integration and transfer to the Midwest, and to strengthen bio/pharma enterprises to speed up investment in the secondary market in China.
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Environment and Health

32 RESEARCH ON THE FACTORS AFFECTING THE DEVELOPMENT OF BIOMEDICINE INDUSTRIAL CHAINS

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Objectives The paper studies the factors affecting the development of biomedicine industry chains based on atmospheric pollutants and their concentration levels, and provides important scientific data for the quantitative evaluation of the value chain of the emerging biomedicine industry.
Methods This paper predicts and evaluates the effect factors and their influence on the development of biomedicine industry chains using the list method, graph overlays, ecological mechanism analysis and other approaches.
Results The study identifies the relationship curve characteristics among the different effect factors so that the impact of the effect factors can be determined and a scientific basis provided for their prevention and control to enhance the development of biomedicine industry chains.
Conclusions Factors affecting biomedicine industry chains include meteorological factors (temperature, relative humidity and dew point temperature, etc) and the social and economic characteristics of the population (sex, age, level of education, smoking history, etc), which have different non-linear relationships.

33 PRACTICE BASED ON THE FULL-TIME VISITATION MODEL FOR PHARMACEUTICAL EDUCATION IN THE RIZHAO REGION, CHINA

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