

## Research Article

# Medical Diagnosis Decision Based on Psychological Cognition Difference of Multistakeholder

Zhen Wei 

*Student Affairs Office, Luoyang Polytechnic, Luoyang, Henan 471023, China*

Correspondence should be addressed to Zhen Wei; 202213005@lypt.edu.cn

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This paper firstly reviews the achievements and existing problems of China's government in the supervision of medical service price in public hospitals in recent years. On this basis, patient's interests, the interests of the public hospital, medical staff perspective, analysis of the three main psychological cognitive differences' influence on medical diagnosis strategy, and the utility of public hospital medical service price regulation are analyzed, and accordingly perfect China's public hospital medical service price regulation suggestions are put forward. In this paper, taking a medical institution as an example, combined with the psychological cognitive differences of multi-interest theme, and through research, it is shown that the causes of influencing the unreasonable admission behavior of patients in medical institutions are as follows: first, the characteristics of vulnerable groups of patients affect the unreasonable admission behavior, mainly children and the elderly. Second, the health risk avoidance psychology drives patients to be hospitalized unreasonably, especially those with chronic diseases or those who pay attention to their own health. Third, the influence of convenience degree on unreasonable admission is relatively small. Fourth, doctor's advice has an important influence on unreasonable admission behavior. Fifth, the medical insurance system affects the unreasonable admission behavior of patients to a certain extent.

## 1. Introduction

In the process of medical system reform in China, it is important to constantly improve the government's supervision of medical service price to promote the reform of medical service price, standardize the price behavior of medical institutions, and safeguard the legitimate rights and interests of patients. It is of great significance to improve the compensation mechanism of medical institutions and reduce the burden of patients' medical expenses. At present, the functional departments of the Chinese government are constantly standardizing the supervision of the service price of medical institutions and further promoting the implementation of the new medical reform by phasing out the drug sales addition policy and expanding the supervision scope of medical service price. In April 2014, the state liberalized the price of medical services in nonpublic medical institutions and implemented market-adjusted prices, which

means that the government has taken another important step in price supervision of medical institutions. Further reforming and improvement of the price supervision of public hospitals will become the focus of people's attention [1–3]. This paper aims to understand the cognition of key stakeholders on two-way referral of medical alliance, including system cognition and interest cognition, analyze the cognitive difference and the main factors affecting the difference, and provide reference for the formulation of hierarchical diagnosis and treatment optimization policies. The specific objectives are as follows: (1) identify the key stakeholder groups of graded diagnosis and treatment; (2) qualitative analysis of the interest demands of key stakeholders is done; (3) analyze the cognitive differences and influencing factors of key stakeholders' interest demands; (4) put forward targeted cognitive convergence strategies according to the influencing factors [4–6]. The purpose of this paper is to collect the theories and methods of

management, statistics, and other disciplines to understand the cognition of key stakeholders on two-way referral of medical alliance.

At present, the majority of medical alliances are loose, and the problems of disconnection and formality are prominent. In addition, the pattern of medical treatment has not changed, the hierarchical diagnosis and treatment of the medical community are blocked, the effect of two-way referral is limited, and the “selective” execution behavior of interest groups is obvious. The fundamental reason for the decision of behavior lies in interests, while the medical community covers multiple subjects such as suppliers, demands, government, fund raisers, and suppliers, and the roles, positions, attitudes, and demands of subjects are different, leading to the disharmony and uneven distribution of interests [7–9]. Clarifying the interests and conflicts of all parties is an important part of achieving the sustainable development of the community. The implementation of two-way referral in medical alliance involves the interests of doctors, patients, insurance, medicine, government, and other stakeholders, who have their own interest demands. The establishment of two-way referral system is bound to more or less effect on their interests; in other words, it may break the original pattern of interest distribution. Therefore, in order to design the incentive mechanism that meets the needs of all parties, we must start from the perspective of the balance of interests of all parties. But cognition is the foundation of behavior. Therefore, understanding the cognition of interests of all parties is the key to meet the demands of interests of all parties and achieve the balance of interests [10–12]. It mainly includes two aspects: system cognition and benefit cognition, analyzes the cognitive difference and the main factors affecting the difference, and provides reference for the formulation of hierarchical diagnosis and treatment optimization policies.

With the development of various medical insurance systems, by the end of 2014, more than 98% of residents had been covered by various basic medical insurance systems with risk-bearing capacity, which continuously released residents’ demands for medical and health services, especially for hospitalization. According to the 2013 National Health Service Survey, the utilization rate of hospitalization services for rural residents increased from 3.4% in 2003 to 9.0% in 2013, an increase of 5.6 percentage points, while the hospitalization rate only increased by 0.3 percentage points from 1993 to 2003. However, while meeting the growing needs of rural residents for health services, excessive demand and utilization of health services also exist at the same time, in which the phenomenon of excessive utilization of inpatient services is particularly obvious for patients who can be treated as outpatients and are not required to be hospitalized, which can be expressed as unreasonable hospitalization [1, 13, 14].

Public hospital reform involves many different interest subjects, including people, public hospitals, and medical staff. Medical service price supervision can make different interest subjects realize their interest demands, so as to promote their active participation in the supervision work. By analyzing the effectiveness of government price

supervision on different interest subjects, this paper clarifies the necessity of government price supervision on public hospitals and further explores the ideas of perfecting government price supervision [15–17].

*1.1. From the Perspective of People’s Interests.* Government price supervision can safeguard people’s health rights and economic interests. In medical service price management, the protection of people’s right to health is the centralized embodiment of the public welfare of public hospitals. To protect the interests of the masses, the government must supervise the service price of public hospitals based on the particularity of the medical market, so as to meet the demands of the masses. The guarantee of people’s basic medical needs is the key point of government supervision, which is reflected in many links of medical service. For example, the price of basic medical service items provided by public hospitals is verified by price supervision departments according to reasonable cost, which deducts financial subsidies and the price difference income of selling drugs and medical devices (consumables), ensuring that the price level of basic medical service of public hospitals can meet the requirements of public welfare. And as the price regulatory authorities to strengthen public hospital medical service behavior and service charge of supervision contain the “inspection services, independent service projects, decomposition to raise prices, the scope of the charge, and the amount of service content.” For example, illegal pricing ACTS of basic medical services may reduce the economic burden of the masses. Government price supervision ensures people’s right to health and economic interests by implementing supervision behavior. Therefore, continuing to safeguard the interests of the masses in the process of supervision will provide important guidance to solve the existing supervision problems [18–20].

*1.2. From the Perspective of Public Hospitals’ Interests.* Government price regulation can enable public hospitals to regulate their price behavior and improve their medical service level. Public hospitals are regulatory objects with both social responsibility and their own economic interests. With the implementation of price supervision, both their social responsibility and economic interests can be guaranteed. On the one hand, supervision on social responsibility can restrain the abnormal profit-seeking behavior of public hospitals, so as to ensure the continuous improvement of medical service quality, patient safety, efficiency, fairness, and suitability in the operation process. On the other hand, it can guarantee public hospitals to obtain economic benefits. Public hospitals often get certain financial subsidies or preferential policies from the government, so as to gain some market advantages that other medical institutions cannot enjoy. In the service price regulation, public hospitals can according to the province (city) determine the basic medical service price benchmark price department, within the scope of the floating range to determine the actual medical service price, and can also, according to the actual service cost and

market supply and demand situation of the basic medical service pricing negotiations, make public hospitals not only get part of the cost of compensation, from basic medical services but also make reasonable profits to compensate its losses in basic medical services by providing differentiated, high-end, and high-priced nonbasic medical services to the market. Therefore, the existing price supervision model provides the feasibility for public hospitals to maintain their overall profit level through the above “cross-subsidy” method. From the perspective of public hospitals’ interests, government price regulation has achieved a “win-win” between the medical service market and public hospitals [21–23].

*1.3. From the Perspective of Medical Staff’s Interests.* Government price regulation can benefit medical staff, who are the direct providers of medical services in public hospitals. “Human is the most active factor in productivity,” but the technical value of medical staff has not been fully reflected in medical costs and total medical expenses for a long time. In hospital operating cost accounting, the main costs are usually limited to tangible costs such as drugs, medical devices, and consumables, while intangible costs such as technical value and medical risk factors are not fully considered. Moreover, the proportion of “drugs” and “examination” in medical expenses also accounts for a large proportion. The technical value of medical staff is ignored, and their legitimate interests cannot be satisfied. In this case, medical staff often realize their expectations of interests by “adverse selection” and “moral hazard” behavior. In the process of price supervision reform, this distortion of price formation mechanism has been paid more and more attention and corrected. The implementation of price adjustment principles such as “total quantity control, structural adjustment, and gradually reaching the target” in supervision has ensured the technical value of medical staff more and more. Through service price supervision and other comprehensive reform measures, medical personnel are willing to cooperate with the supervision subject to realize their price regulation goals on the premise of realizing self-value. Therefore, respecting the interests of medical staff can also provide a thinking direction for solving regulatory problems [24, 25].

## 2. Multi-Interest Theme Model

The term “stakeholder” actually first appeared in management literature in 1963. Stakeholders are not isolated in the value creation process. The multistakeholder coordination optimization model of medical institutions is a distributed optimization model based on information and communication technology and on the premise of independent optimization of each stakeholder, as shown in Figure 1. Therefore, this model is used to deal with the parallel optimization problem of multiple stakeholders in medical structure. When there are conflicts among multiple interest subjects, it can coordinate and deal with them fairly from the perspective of the best overall interest and realize parallel



FIGURE 1: The multistakeholder.

optimization at the same time. In the coordinated scheduling mode, the process of coordinated optimization scheduling by multiple stakeholders is as follows: in each optimization cycle, stakeholder collects internal information and performs optimization according to its optimization objective. According to a certain coordination method to solve the conflict of interest between interest subject and other interest subject, the interests of the abnormal operation of the situation can be through communication with other interests to get power support.

To sum up, the multistakeholder coordination optimization model of medical institutions has the following characteristics: (1) Each stakeholder can conduct independent optimization, and multiple optimization objectives can be considered in the optimization model to fully reflect the requirements of each stakeholder. (2) All stakeholders are in the same position in parallel optimization solution. Compared with traditional single agent optimization, the calculation dimension variable is reduced and the calculation speed is accelerated. (3) All stakeholders can communicate with each other and transfer information and data to each other. When any interest subject has abnormal state or failure, other interest subjects are coordinated to provide power support through game coordination strategy. Modern stakeholder theory originated from firm theory and was later applied to the policy field. It is usually considered from three dimensions of power, legitimacy, and urgency.

The characteristics of each benefit main body independent active optimization, optimization objective function of the inconsistencies can lead to conflict between different interest subjects on the decision, the decision variables of each stakeholders will affect the other stakeholders and achieve the goal of the optimization of the choice of decision variables, and any interest subjects cannot fully control decisions decided to other stakeholders. Each interest subject needs to make decision behavior in line with its own interest goal according to the reaction of other interest subjects. Therefore, the problem of coordination optimization is complicated and is the key to solve the problem of multistakeholder coordination optimization effectively.

As a basic optimization unit, each stakeholder has its own plan and optimization goal. Therefore, it is necessary to develop methods to coordinate and control the conflicting variables of each stakeholder to achieve consistency. The

optimization model under the multistakeholder coordination optimization mode is as follows:

$$\max f(x_1, \dots, x_n), \dots, f_m(x_1, \dots, x_n). \quad (1)$$

The corresponding target function is

$$G_m(x_1, \dots, x_n) = 0, \quad (2)$$

$$H_m(x_1, \dots, x_n) \leq 0, \quad (3)$$

$$x_{\min} \leq x_t \leq x_{\max}. \quad (4)$$

*2.1. Model of Medical Institution.* From the perspective of economy, the goal is to maximize the interests of medical institutions:

$$\max U = C_s + C_{SUB} - C_{OM} - C_{CDG}, \quad (5)$$

where  $C_s$  is the income of medical institutions;  $C_{SUB}$  is government subsidy;  $C_{OM}$  is the operation and maintenance cost of medical institutions;  $C_{CDG}$  is the medical cost of medical institution.

$$C_s = \sum_{t=1}^N \sum_{t=1}^H C_{sell} P, \quad (6)$$

where  $C_{sell}$  is the selling price of medical project;  $P$  is medical items;  $H$  is the number of divided periods of a complete operation cycle;  $N$  is the number of medical items.

$$C_{SUB} = \sum_{t=1}^{N_1} \sum_{j=1}^{N_2} \sum_{t=1}^H C_{sub} (P_1 + P_2), \quad (7)$$

$$C_{OM} = \sum_{t=1}^N \sum_{t=1}^H CP. \quad (8)$$

*2.2. Medical Staff Model.* As operation managers of medical institutions, medical personnel are constrained by the safe operation of medical institutions and aim at economic operation. The benefit function is as follows:

$$\max U = C_{user} - (C_{loss} + C_s + C_{DR}), \quad (9)$$

where  $U$  is the total income of medical staff;  $C_{user}$  is the labor cost of medical staff;  $C_{loss}$  is the economic loss generated;  $C_s$  is the cost of personnel.

$$C_{loss} = \sum_{t=1}^H CP. \quad (10)$$

*2.3. Patient Model.* The benefit function of patients is

$$\max U = C_{IL} + C_{DRL} - C_l, \quad (11)$$

where in  $C_l$  is the medical cost of patients.

$$C_{IL} = \sum_{t=1}^H CP. \quad (12)$$

### 3. Stakeholder Theory

The key interest groups of hierarchical diagnosis and treatment in medical association are doctors and patients. Medical side includes comprehensive medical institutions and their medical staff and primary medical institutions and their medical staff, and patient side refers to patients or residents. Stakeholders are not isolated in the value creation process. Modern stakeholder theory originated from firm theory and was later applied to the policy field. It is usually considered from three dimensions of power, legitimacy, and urgency.

China's current urban and rural medical service system includes the government, medical security institutions, medical product suppliers, various hospitals, and other participants. Among them, the government is mainly responsible for the formulation of medical service policies, the provision of medical service funds, and the supervision of medical service market. At present our country serves charge of primary medical treatment by government, society, and individual tripartite share. The government undertakes the function of capital investment to the hospital, also undertakes the function of grade evaluation of the hospital and professional title evaluation of doctors, and gives guidance to the hospital work. The government undertakes the regulatory function for the pharmaceutical industry, mainly regulating the product and service price, drug quality and safety of drug suppliers and medical device manufacturers, and approving new drugs. Medical security institutions are responsible for the management, allocation, reimbursement, and supervision of medical service funds.

*3.1. Functions of Medical Product Suppliers.* Medical product suppliers include manufacturers and distributors of drugs, medical devices, and equipment. It is an indispensable part of production and service in medical institutions. Its main functions include the research and production of medicines and medical equipment needed by medical institutions and the provision of corresponding logistics and transportation services.

*3.2. Functions of Medical Institutions.* Medical institutions purchase products from medical product suppliers and drug suppliers. Use these products and their own expertise to provide services to patients, and determine patients' medical costs. Determine the marketing of supplier products and influence of the payment of insurance institutions. Doctors dictate which treatments or medications patients receive. Therefore, medical institutions become the dominant body of the medical service market, which determines the sales of medical products and the treatment of patients.

The widely cited framework for health system performance proposed in the World Health Report 2000 assumes that each system has its own specific goals and that all systems have three goals in common: health promotion, responsiveness, and equity in financing. Health promotion is not only about improving health level, but also about improving population distribution and reducing inequity in health distribution. Responsiveness refers not only to respect for personal dignity, but also to service satisfaction. Equity in financing means that each household pays fairly for health.

Based on the WHO health system performance evaluation model, this study focuses on health system responsiveness, health service accessibility, and quality. Health system responsiveness includes dignity, autonomy, confidentiality, timely attention, social support, quality of infrastructure, and selectivity. Health service accessibility includes physical accessibility and economic accessibility. The appeal part of the questionnaire design is based on the above points and then integrated according to the research content. Patients' demands are identified in the following aspects: dignity and confidentiality, autonomy and selectivity, safety, effectiveness, continuity, and accessibility (physical, economic, and service accessibility). Existential needs include safety, effectiveness, continuity, and accessibility, and relationship needs include dignity and confidentiality, autonomy and selectivity, doctor-patient relationship, and so on.

The hierarchy of needs theory is proposed by American behaviorist Alfred Alderford after revising Maslow's hierarchy of needs theory. Its main content is to divide human needs into three categories: existence needs, relationship needs, and growth needs. Use the initials *E*, *R*, and *G* for each category. The hierarchy of needs theory divides people's needs into the above three categories, so the appeals of the key interest subjects of graded diagnosis and treatment can also be divided into these three categories. ERG demand theory, as macro guidance and being supported by literature analysis, reflects the needs of key stakeholders together with WHO health system performance evaluation model. Existence is the satisfaction of physiological factors and material needs, and physiological conditions are important factors affecting the change of demands. The existing needs of medical staff in core medical institutions include salary, business volume, safety, etc., and relationship needs include safety responsibility, doctor-patient relationship, etc. Occupational safety refers to the personal safety, security, etc., both medical staff focus on their own safety. The group also includes its close attention to the safety of the patients, which reflects the relationship between the medical personnel for appeal and other content, which is influenced by emotion and belonging. It also includes the relationship between medical staff in medical institutions, the relationship between medical staff in core medical institutions and medical staff in primary medical institutions, and the relationship between medical staff and patients. Growth needs include business level, career development space, etc., to maximize personal ability.

#### 4. Experimental Study

The content of the appeal of both doctors and patients: Through theoretical analysis and consultation demonstration, the main interests of the medical side are determined as compensation, safety responsibility, doctor-patient relationship, career development and technical improvement, etc. The main interests of the patient are safety, timeliness and effectiveness, economy, and convenience. The conflicting interests of the two sides are who has the right to decide treatment, the safety of diagnosis and treatment, or the priority of medical cost.

Cognition and difference between doctors and patients on doctors' interest demands: Doctors and patients have different understanding of medical demands. The top three demands of doctors are income, business volume, and personal career development. Income, business volume, and safety risk are the top three demands of patients for medical treatment. The factors influencing the cognitive difference between doctors and patients include the cognition of two-way referral system of medical alliance, gender, and unit level. There are differences between doctors and patients in their understanding of patients' demands. Patients think the most important demand is medical cost, followed by efficient medical treatment and medical safety, while doctors think the most important demand of patients is the safety of medical services. The influential factors include referral experience, age, education background, and income. At the same time, the patients think that the biggest change brought by the implementation of the two-way referral system of medical association is the simple procedure of diagnosis and treatment, while the doctors think that the biggest change is the continuity of medical services.

The analysis shows that there are significant differences between male and female medical staff in terms of workload and career development. Female medical staff pay less attention to these two aspects than male medical staff but pay more attention to income and safety than male medical staff. In terms of unit level, medical institutions with lower level pay more attention to income and business volume. The medical staff with less than 5 years' working time pay more attention to income and business volume than the medical staff with more than 5 years' working time. Medical staff with more than 10 years of service pay more attention to relationship, safety, and career development than those with less than 10 years of service. From the analysis of professional title, medical staff below junior professional title pay more attention to income. From the nature of work, doctors and pharmacists are more concerned with personal career development than nurses. From the analysis of educational background, there was no statistical significance in the attention of medical staff with different educational background to the above appeals. Cognition and difference between doctors and patients on patients' interest demands: In terms of gender, both male and female patients pay more attention to the safety, effectiveness, and accessibility of medical care and less attention to continuity, dignity, and confidentiality. Young and middle-aged patients have significantly different demands for safety and confidentiality,

autonomy, and selectivity compared with older patients. From the occupational point of view, the staff of enterprises and institutions pay high attention to the demands of various aspects. From the analysis of marital status, there is no statistical significance in the attention of different marital status to the above appeals. From the analysis of educational background, people with higher educational background pay more attention to dignity, confidentiality, autonomy, and selectivity than people with lower educational background, and people with lower educational background pay more attention to accessibility. From the perspective of individual monthly income, low-income people pay more attention to effectiveness and accessibility and less attention to other aspects. Income directly affects the working enthusiasm of medical staff and reflects their living standards to a certain extent. Material life is the basis of survival. Security includes medical staff's concern about the safety of themselves and the group they are in, as well as the safety of patients. This reflects medical staff's appeal for relationship, and relationship includes more content than just security relationship. It also includes the relationship between the medical staff in the medical institution, the relationship between the medical staff of the core comprehensive medical institution and the medical staff of the basic medical institution, and the relationship between the medical staff and patients. Only when these relations are relatively harmonious, can the two-way referral system be better implemented. Career development reflects both social needs and relationship needs. Career development is the requirement for medical workers to improve their own ability and also the embodiment of more harmonious interpersonal relationship and more important social status. Figure 2 predicts the  $u$  with different CE and E.

At the present stage, the main contradiction in our society is the contradiction between the people's growing needs for a better life and unbalanced and inadequate development. With the development of society, the people's demand for health is getting higher and higher, requiring safe, effective, and continuous medical treatment. Accessibility includes economic, physical, and service accessibility. The cost of medical treatment should be appropriate, the time of arrival and waiting for treatment should be short, and the treatment should be convenient. At the same time, with the progress of science and technology, the emergence and improvement of online appointment, registration, telemedicine, electronic medical record and data sharing, and the diversification of transportation, the medical treatment process is more convenient, the waiting time is greatly shortened, the rational utilization of medical resources is promoted, and the accessibility requirements of residents/patients are constantly met. The common demands of both doctors and patients are economic demand, safety demand, and relationship demand. Balancing the needs of doctors and patients will facilitate the smooth implementation of the two-way referral system. Residents/patients have a low awareness of graded diagnosis and treatment, so relevant publicity and education activities need to be further strengthened. The smooth implementation of graded diagnosis and treatment requires the joint efforts of

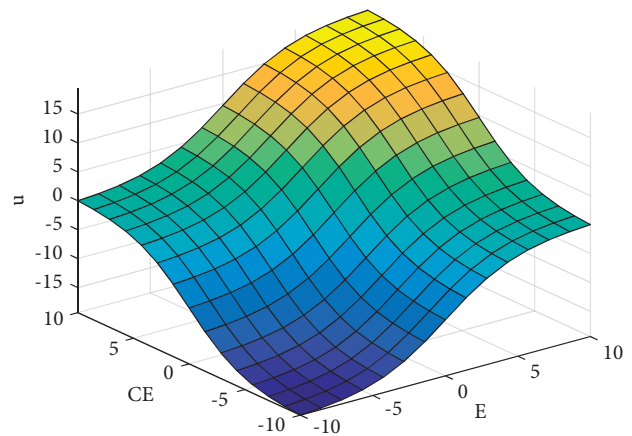


FIGURE 2: Evaluated  $u$  versus CE and E.

the government, medical institutions, medical personnel, and patients to put forward coordinated countermeasures and promote cognitive consistency as much as possible.

The medical staff of medical couplet of two-way referral might affect the degree of attention, in business, revenue, referral decisions, security risk, personal career development, and doctor-patient relationship. The agency of institutions for development and cooperation, the other nine options, and the medical personnel to choose business and revenue accounted for more than half. While the second is a personal career development and safety risk. There is no objection to the change of income, and the change is expected to be positive. However, as for the business volume, 29 medical staff (53.70%) of the grassroots member hospitals hope that the business volume will be positive, and more than 40% of the medical staff of the core general hospitals hope that the business volume will be negative. That is to say, the medical staff of grassroots member hospitals hope that the business volume can increase under the implementation of two-way referral system of medical union, but the medical staff of some core general hospitals hope that the business volume can decrease. The corresponding results are shown in Figure 3.

In fact, after the implementation of two-way referral in medical alliance, medical staff believe that the first three changes are the development of cooperative organizations, business volume, and income, followed by personal career development. In the process of investigation, we further learned that the number of people who chose the development and change of cooperative organizations was the largest, with 35 people, and the change was positive, while the change of income and business volume was positive and negative. Twelve medical staff chose to increase their workload, 10 of whom were from level II hospitals in core general hospitals, and 14 chose to decrease their workload, 11 of whom were from primary care institutions. In the 16 medical staff who chose a decrease in income, 13 staff thought the change in income was negative, i.e., a decrease in income, and 11 of them were from primary member medical institutions, as shown in Figure 4.

A score range of 0–100 was set for patients' trust of the medical staff attending the medical institution for treatment.



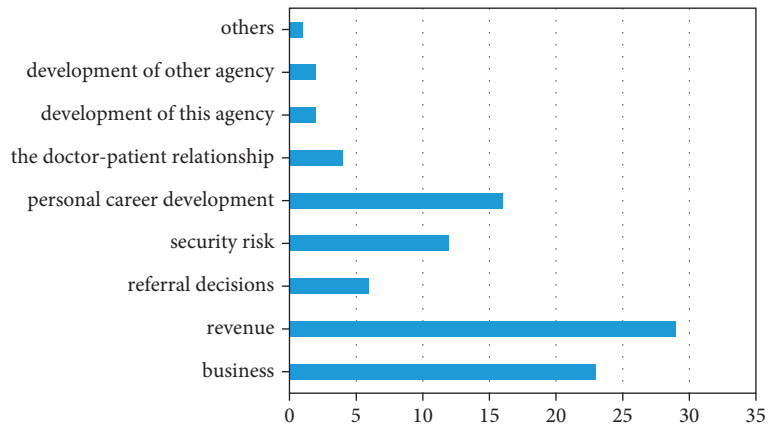


FIGURE 3: Predicted results.

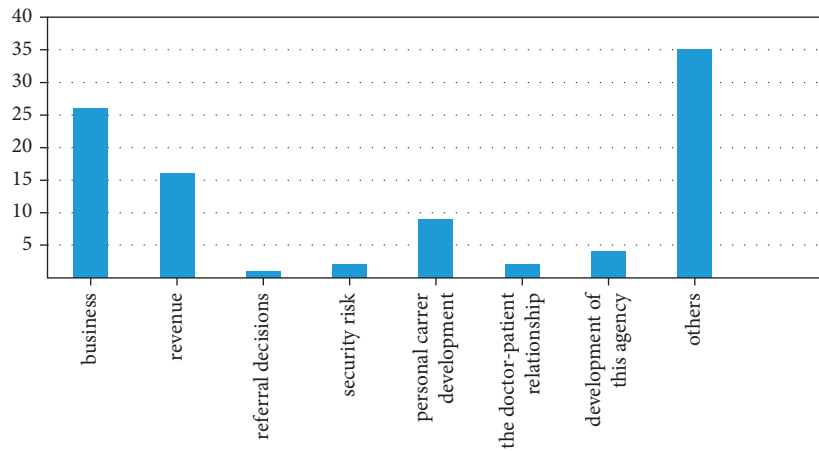


FIGURE 4: The fact that two-way referrals have an impact.

The higher the score, the higher the patient’s trust, and the medical staff and residents/patients were rated simultaneously. The average score of the core general hospitals’ medical staff was  $75 \pm 2.3$ , and the average score of township hospitals’ medical staff was  $50 \pm 1.9$ . It can be seen that medical staff in core general hospitals believe that patients who seek treatment in this institution have a high degree of trust in this institution, while medical staff in primary medical institutions believe that patients who seek treatment in this institution have a skeptical attitude towards this institution. In fact, patients gave an average of  $79 \pm 2.2$  points to medical staff in core general hospitals and  $42 \pm 1.9$  points to medical staff in township hospitals. In terms of doctor-patient relationship, 77 medical staff (81.05%) thought it was contractual or cooperative relationship with patients, as shown in Figure 5.

The medical staff of medical couplet of two-way referral might affect the degree of attention, in business, revenue, referral decisions, security risk, personal career development, and doctor-patient relationship. The agency of institutions for development and cooperation is different from

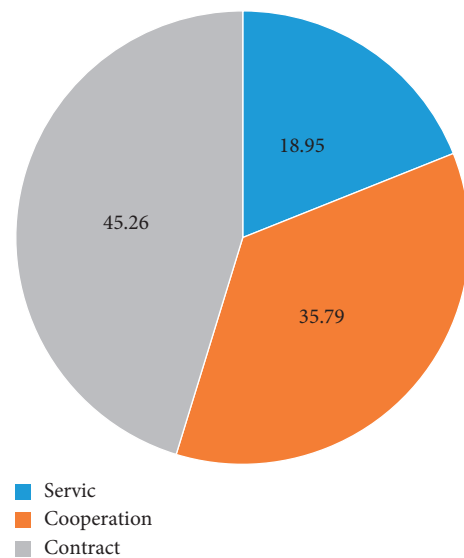


FIGURE 5: The relationship between the medical staff and the patient.

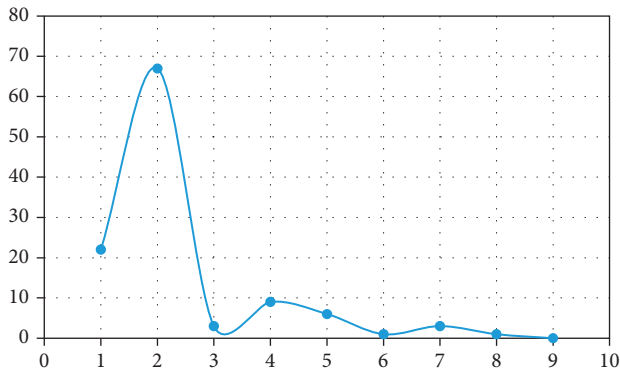


FIGURE 6: Residents' perception of the impact of medical staff on two-way referrals.

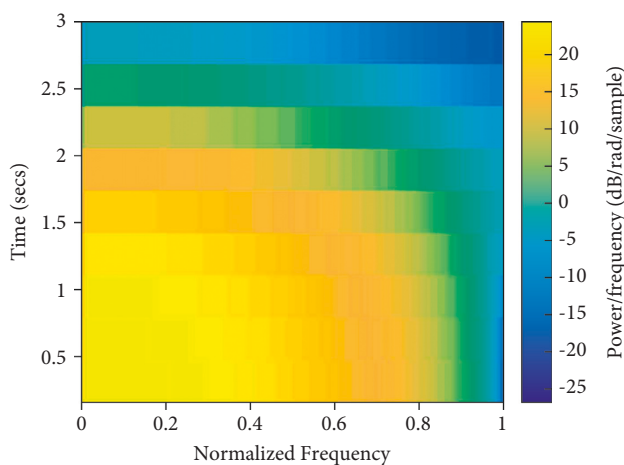


FIGURE 7: Predicted value.

the other nine options. The medical personnel who are to choose business and revenue accounted for more than half, while the second one is a personal career development and safety risk. During the survey, it was further learned that residents/patients believed that the changes brought about by the implementation of two-way referral were all positive. In fact, residents/patients believe that the implementation of medical combination of two-way referral brings the biggest change to medical staff income, and income is increased. In other words, residents/patients believe that the implementation of two-way referral by medical combination meets the needs of medical staff and brings positive changes to medical staff (Figures 6 and 7).

## 5. Conclusion

In this paper, the key stakeholders of hierarchical diagnosis and treatment in medical association are identified through cword analysis. Secondly, combined with the WHO health system performance evaluation model and ERG theory, the interest demands of key stakeholders were qualitatively analyzed and modified and improved through qualitative interviews of stakeholders. Thirdly, the empirical survey data are used to analyze the differences in understanding of key

stakeholders' interest demands and their influencing factors. Finally, according to the influencing factors, the targeted cognitive convergence strategy is proposed.

Due to the influence of the actual situation, the field research is limited and the sample size is small. At the same time, due to the wide range of respondents and numerous corresponding medical institutions, it is impossible to obtain data one by one, so the sample may be underrepresentative and the results may be biased. This study is based on micro data analysis, and the quantification of relevant influencing factors is insufficient.

## Data Availability

The data used to support the findings of this study are available from the author upon request.

## Conflicts of Interest

The author declares that there are no conflicts of interest.

## References

- [1] R. Peters Elizabeth, A. Stanko Elizabeth, and M. Robin, "Reflections on project managing a home office funded collaborative multi-stakeholder research project[J]," *Policing: Journal of Policy Practice*, vol. 14, no. 1, pp. 146–160, 2020.
- [2] Q. P. Ilham, H. Purnomo, and T. Nugroho, "Model of multi-stakeholder forest management: a system study of protected forest management unit in solok, Indonesia," *IOP Conference Series: Earth and Environmental Science*, vol. 285, no. 1, Article ID 012009, 2019.
- [3] P. Du, Z. Chen, Y. Chen, Z. Ma, and H. Ding, "A Bi-level linearized dispatching model of active distribution network with multi-stakeholder participation based on analytical target cascading," *IEEE Access*, vol. 7, pp. 154844–154858, 2019.
- [4] Xi Han, X. Wu, X. Chen, and P. Sha, "Artificial intelligent based energy scheduling of steel mill gas utilization system towards carbon neutrality," *Applied Energy*, vol. 295, pp. 765–778, 2021.
- [5] B. Xu, Y. Ma, Pa Zhong, Z. Yu, J. Zhang, and F. Zhu, "Bargaining model of synergistic revenue allocation for the joint operations of a multi-stakeholder cascade reservoir system," *Water Resources Management*, vol. 32, no. 14, pp. 4625–4642, 2018.
- [6] K. Biekart and A. Fowler, "Ownership dynamics in local multi-stakeholder initiatives," *Third World Quarterly*, vol. 39, no. 9, pp. 1692–1710, 2018.
- [7] S. Johan, "A multiple stakeholder perspective for evaluating community-based dementia care[J]," *Innovation in Aging*, vol. 4, no. 1, pp. 60–61, 2020.
- [8] A. Kumar and R. Anbanandam, "Evaluating the interrelationships among inhibitors to intermodal railroad freight transport in emerging economies: a multi-stakeholder perspective," *Transportation Research Part A: Policy and Practice*, vol. 132, pp. 559–581, 2020.
- [9] D. Arenas, L. Albareda, and J. Goodman, "Contestation in multi-stakeholder initiatives: enhancing the democratic quality of transnational governance," *Business Ethics Quarterly*, vol. 30, no. 2, pp. 169–199, 2020.
- [10] H. Liang, W. Li, and Q. Zhang, "Semantic-based 3D information modelling and documentation of rockeries in Chinese



- classical gardens: a case study on the rockery at Huanxiu Shanzhuang, Suzhou, China,” *Journal of Cultural Heritage*, vol. 37, pp. 247–258, 2019.
- [11] M. Wilson, A. Van Citters, I. Khayal et al., “Designing an electronic point-of-care dashboard to support serious illness clinical visits: a multi-stakeholder coproduction project (TH341B),” *Journal of Pain and Symptom Management*, vol. 59, no. 2, pp. 430–431, 2020.
- [12] L. Borge and S. Bröring, “What affects technology transfer in emerging knowledge areas? A multi-stakeholder concept mapping study in the bioeconomy,” *The Journal of Technology Transfer*, vol. 45, no. 2, pp. 430–460, 2020.
- [13] H. I. Hanson, E. Eckberg, M. Widenberg, and J. Alkan Olsson, “Gardens’ contribution to people and urban green space,” *Urban Forestry and Urban Greening*, vol. 63, Article ID 127198, 2021.
- [14] H. E. Hoyle, “Climate-adapted, traditional or cottage-garden planting? Public perceptions, values and socio-cultural drivers in a designed garden setting[[]],” *Urban Forestry and Urban Greening*, vol. 65, p. 127362, 2021.
- [15] K. M. Smith, M. A. Hill, K. Rosendall, and M. Farha, “Engaging patients on tumor boards: a multi-stakeholder perspective study,” *Journal of Clinical Oncology*, vol. 38, no. 15\_suppl, Article ID e19243, 2020.
- [16] J. J. J. Nzau, B. M. Denemadjbe, E. F. Dumas, and M. A. Rodriguez, “Catalysing change for reproductive health in Chad through a multi-stakeholder coalition,” *Sexual and reproductive health matters*, vol. 27, no. 1, p. 312, 2019.
- [17] V. Spiros, M. Jane, and V. Thorsten, “Multistakeholder advice at the European medicines agency: is it still needed?” *Clinical Pharmacology & Therapeutics*, vol. 105, no. 4, pp. 819–821, 2019.
- [18] H. Martin, M. Aragrande, J. A. Berezowski et al., “EVALvINC: Evaluating knOwLedge INtegration Capacity in multi-stakeholder governance,” *Ecology and Society*, vol. 24, no. 2, pp. 1–9, 2019.
- [19] J. Mou, J. Cohen, Y. Dou, and B. Zhang, “International buyers’ repurchase intentions in a Chinese cross-border e-commerce platform,” *Internet Research*, vol. 30, no. 2, pp. 403–437, 2019.
- [20] Z. Sun, J. Xie, Y. Zhang, and Y. Cao, “As-built BIM for a fifteenth-century Chinese brick structure at various LoDs,” *ISPRS International Journal of Geo-Information*, vol. 8, no. 12, p. 577, 2019.
- [21] L. Christine Cécile, J. D. Maeseneer, and W. Sara, “Using concept mapping to identify policy options and interventions towards people-centred health care services: a multi stakeholders perspective,” *International Journal for Equity in Health*, vol. 17, no. 1, p. 177, 2018.
- [22] J. V. Selby, C. Grossman, M. Zirkle, and S. Barbash, “Multistakeholder engagement in PCORnet, the national patient-centered clinical research network,” *Medical Care*, vol. 56, no. Suppl 1, pp. S4–S5, 2018.
- [23] A. Corsaro, L. G. Sisti, P. Parente et al., “Evolution of a multi-stakeholder initiative of health promotion in 20 suburban Roman districts,” *The European Journal of Public Health*, vol. 28, no. 4, pp. 1–9, 2018.
- [24] S. Simon, E. Nyamsuren, H. Kruiger, and H. Xu, “Geo-analytical question-answering with GIS,” *International Journal of Digital Earth*, vol. 14, no. 1, pp. 1–14, 2021.
- [25] Z. Huangfu, H. Hu, N. Xie, Yu-Qi Zhu, H. Chen, and Y. Wang, “The heterogeneous influence of economic growth on environmental pollution: evidence from municipal data of China,” *Petroleum Science*, vol. 17, no. 4, pp. 1180–1193, 2020.