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Research Article

Clinicopathological Characteristics and Curative Effect of Lymphoma Based on Sampling Theory

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With the continuous development of society, people's attention to the body is also increasing. This article explains and analyzes the clinicopathological characteristics of a more serious disease, lymphoma, and the effect of treatment. In the previous studies of this type of disease, the collected data was very limited, and the theory for data analysis was also lacking. The direct result was that the analysis of such disease types was not complete, and it was difficult to obtain statistical significance, which made the clinical guidance weak. In order to improve this problem, this paper applies the sampling theory in statistics to the clinicopathological characteristics of lymphoma and the effect of treatment. Through the scientific analysis of such samples, it is hoped to provide some ideas for clinical treatment. In the sampling theory, this paper selects two methods, Bayesian algorithm and adaptive sampling theory, and introduces the corresponding methods for the correlation analysis of the clinicopathological characteristics and curative effect of lymphoma according to the above two methods. These related processing methods start from a large number of samples and provide sufficient computational support for the final experiments. Experiments show that the score of clinical symptoms of lymphoma is not less than 96%, which means that the patient is in a state of recovery. When the evaluation score is between 63% and 96%, the corresponding treatment has a significant effect. These results show that, in the analysis of the clinicopathological characteristics of lymphoma and related treatment effects, by using the Bayesian algorithm in the sampling theory and the adaptive sampling theory, the data results can well correspond to the clinical effects.

1. Introduction

With the continuous changes of the times, the understanding of the disease has been gradually deepened in the long-term accumulation. At the same time, with the rapid development of modern science and technology, some medical examination methods have been greatly improved, which has provided a lot of technical support for the diagnosis and treatment of more serious diseases. This includes awareness of severe diseases that have received little attention before and improvements in diagnosis and treatment. The research on the clinicopathological characteristics and therapeutic effect of lymphoma in this paper is, to a large extent, the practical application of modern scientific methods. The application of the basic statistical theory of sampling theory in the study of the clinical pathological characteristics of lymphoma and the treatment effect has realized the interdisciplinary use of different fields. Due to the characteristics of such diseases as lymphoma, the previous studies on it were mostly individual case studies. The advantages of this research method can provide better explanations for individual cases and obtain certain clinical treatment ideas. However, the results obtained by statistical processing and analysis of a large number of related cases will provide more scientific support for clinical pathological analysis and the establishment of corresponding curative effects. The sampling theory used in this paper for the clinicopathological characteristics of lymphoma and the treatment effect can be processed and analyzed between relatively independent individuals to obtain the association between the final cases.

For the study of the clinicopathological characteristics and treatment effects of lymphoma, according to the experience of the researchers and the practitioners, their respective perspectives are different. Huet et al. studied the effect of protein transferases in combination on lymphoma [1]. Borella and his team used MPC as a diagnostic method in their research [2]. Hamid et al. determined its pathological characteristics by studying the frequency of disease types [3]. Opie et al. conducted research on some diseases in South Africa, taking the infection rate of HIV-infected people as the research object [4]. Sim et al. emphasized the clinical radiological and histopathological features of the disease in his research [5]. The above studies are all related to the clinical characteristics of lymphoma, and some researchers have discussed the corresponding methods and means for the treatment of lymphoma, so as to carry out a certain degree of in-depth treatment of lymphoma. In addition, researchers have used different methods of diagnosis and examination for lymphoma research. This type of study is carried out on the pathology of lymphoma, in various ways, in order to improve the efficiency of diagnosis. Other researchers have studied subjects with other diseases to explore the effects of other diseases on lymphoma. This series of researches are based on the research conducted by the researchers for some specific cases, and the analysis of the data generated by the cases is not sufficient. Therefore, in response to this problem, this paper will use the method of sampling theory to analyze and deal with it.

In order to effectively process and analyze the data related to lymphoma, this article will discuss the sampling method, which has been studied in various fields in various fields. Nguyen and Unser applied some assumptions of sampling theory to signal processing to sample different samples and analyze samples [6]. Zou and Jacob applied the sampling theory to image processing [7]. Lu et al. used the sampling theory based on Bayesian probability algorithm to determine the internal relationship between sensor data [8]. The experiment carried out by Combes and his team was to sample the radio signal transmission and analyze the optimal transmission rate [9]. Esbensen and Paoletti studied the motivations of sampling systems by using representative sampling forms [10]. It can be seen from the above studies that most of the applications of sampling theory were aimed at signal and transceiver devices, which belonged to the mechanical field. Sampling theory is used in this field because the data samples corresponding to the signals generated in this field are large and contain a variety of data. If a certain rule of sampling is used, the complicated data can be effectively integrated, so as to provide scientific evidence support for the corresponding research. However, there is a lack of research on the application of sampling theory in medicine, which makes the integration of data corresponding to medical cases not widely used. The application of sampling theory to medical research is also beneficial for in-depth understanding of certain diseases.

This article adopts the sampling theory to study the clinicopathological characteristics and curative effect of lymphoma. The purpose is to reasonably analyze the data related to lymphoma and obtain the treatment trend after the case from the processing results, so as to achieve better improvement of the means of lymphoma treatment. The methods used in this paper are Bayesian algorithm based on sampling theory and adaptive sampling theory. According to the respective characteristics of the two methods, the collected data are processed to a certain extent, so as to realize the analysis of the clinicopathological characteristics of lymphoma and the treatment effect. Through the clinicopathological investigation of lymphoma and the experiment of lymphoma pathology and curative effect based on sampling theory, the results show that the deterministic result of the former clinical diagnosis research has reached 41. The latter experiment proves that the Bayesian algorithm of the first kind has better utility. This indicates that the sampling theory can achieve better data analysis for the clinicopathological characteristics and treatment effects of lymphoma, so as to obtain more practical treatment data.

2. Clinicopathological and Therapeutic Methods of Lymphoma under Sampling Theory

2.1. Clinicopathological Characteristics and Curative Effect of Lymphoma. Lymphoma is a more serious disease. It contains many categories, but the process of its discovery can be more complicated. This is related to the characteristics of the diagnosis and treatment of lymphoma, because it is relatively difficult to efficiently obtain certain accurate information with the current medical technology and medical means for the pathological mechanism of lymphoma. The whole process of diagnosis and treatment of lymphoma can be decomposed into several parts, including etiological diagnosis, symptom diagnosis, treatment, and prognosis. Its specific structural process is shown in Figure 1.

Figure 1 shows an introduction to the general process of diagnosis and treatment of lymphoma. After the etiology and symptoms of this type of disease are diagnosed, the corresponding treatment methods will be particularly important [11]. In a medical environment with both traditional Chinese medicine (TCM) and western medicine, the choice of treatment methods will also correspond to the combined use of TCM and western medicine. The reason for the use of integrated traditional Chinese and western medicine for the treatment of lymphoma is that the pathological mechanism of the disease is relatively complex. Traditional Chinese medicine and western medicine have different perspectives on their diagnosis. Their prognosis is more complicated in the current medical diagnosis and treatment, and the treatment methods are relatively simple.

2.1.1. Principles and Methods of Diagnosis of Lymphoma. For the diagnosis of lymphoma, the first is that the type of lymphoma should be known. The discussion on the classification of lymphoma is also complicated, which is usually divided into three categories: B-cell lymphoma, non-Hodgkin lymphoma, and Hodgkin lymphoma, and a certain classification is beneficial to the development of the diagnosis before western medicine treatment and the improvement of the diagnosis efficiency. Western medicine diagnosis of lymphoma can be carried out by certain medical methods, which are based on tissue sampling of individual

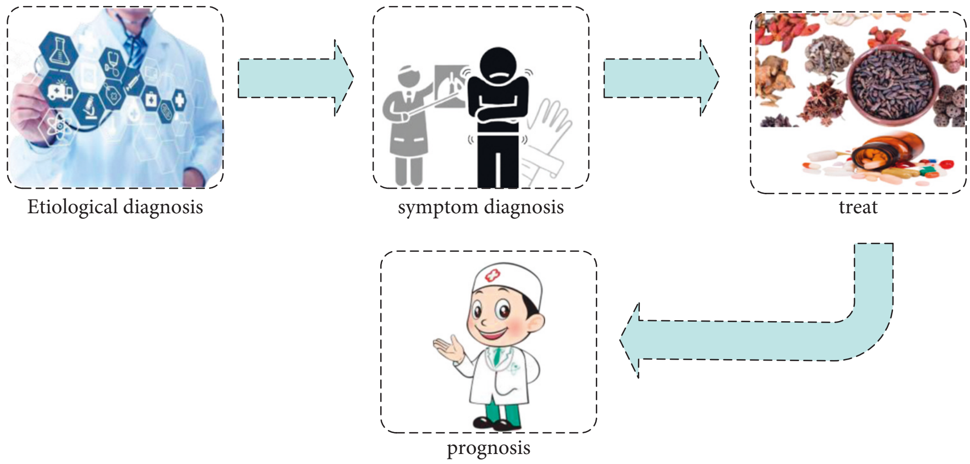

Figure 1: Flowchart of diagnosis and treatment of lymphoma.

cases and determined by some physical, chemical, and biological tests [12]. Its principle corresponds to the reactions of various items in physicochemical and biochemical processes, and the measured results are determined according to the existing standards. The specific detection method is shown in Figure 2.

The detection methods in Figure 2 roughly cover the detection methods of lymphoma, and some of the above-mentioned various types of detection methods are also used for general diseases [13]. It can be known from this that it is difficult to diagnose lymphoma with high efficiency to a certain extent. Among the above detection methods, the most effective is tissue detection in pathological detection, which is still an important criterion for its diagnosis. The above diagnosis still has obvious limitations for lymphoma treatment. In order to improve the accuracy of lymphoma detection results, it is necessary to add typical clinical manifestations for a certain degree of reference. Therefore, it is necessary to understand the clinical manifestations of lymphoma. In order to improve the effect of its diagnosis and treatment, this article will also carry out TCM diagnosis for lymphoma, from the perspective of traditional medicine, to provide diagnostic guarantee for this type of disease. The perspective of TCM is also based on the clinical manifestations of the case. Through the diagnosis method of TCM, a certain degree of paving is prepared for the final treatment.

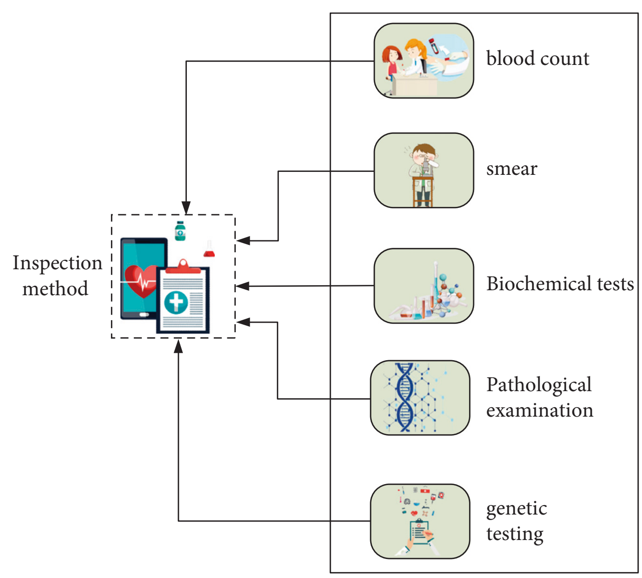

Figure 2: How lymphoma is detected.

2.1.2. Influencing Factors of Lymphoma Diagnosis and Treatment Methods. The above content expounds the diagnostic methods of lymphoma. The diagnostic methods of traditional Chinese medicine and western medicine can play a certain role in the treatment of lymphoma. However, western medicine diagnosis will be affected by certain factors, resulting in deviations in results, which will eventually reduce the guidance of its treatment [14]. Therefore, this article will discuss the influencing factors of western medicine diagnosis of lymphoma. The method adopted is the analysis of clinical symptoms for a certain number of cases and a series of imaging diagnosis as the standard of influencing factors of lymphoma detection methods. Then some improvements according to the actual scene are made. The results of lymphoma diagnosis will start from two different aspects, and the possible influencing factors are shown in Figure 3.

Figure 3 provides a more complete overview of the factors influencing the outcome of a lymphoma diagnosis. Through the various influencing factors in the figure as indicators, the case is investigated and the relevant data are collected to analyze and process the diagnosis results of the detection results of the cases. After that, it is necessary to carry out corresponding treatment discussions based on the analysis of the diagnosis results. The treatment of lymphoma corresponds to the methods of traditional Chinese and western medicine mentioned above. According to the diagnosis results of western medicine and the different treatment methods of Chinese and western medicine, the treatment process of lymphoma as shown in Figure 4 is constructed.

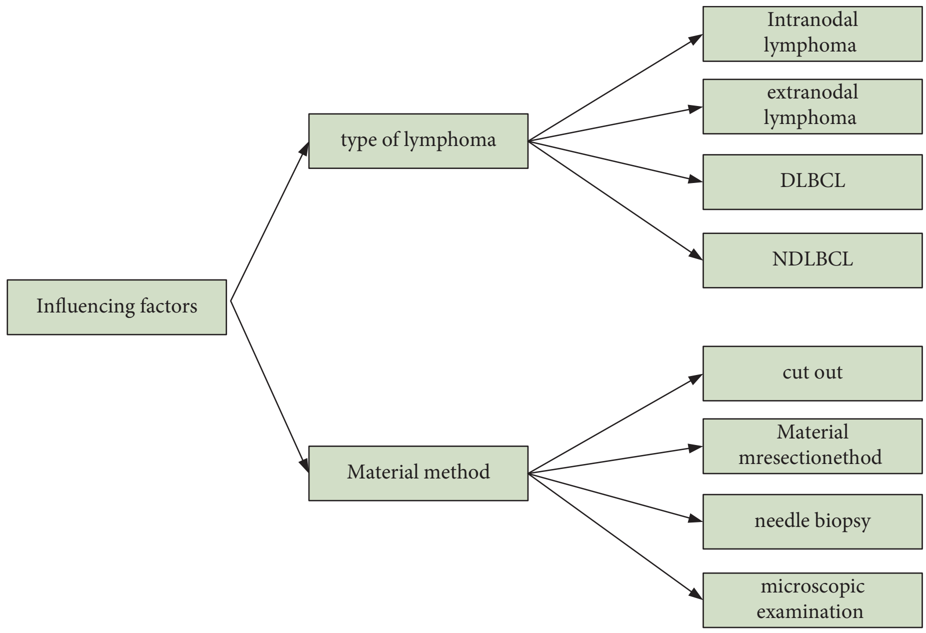

Figure 3: Factors influencing outcome of lymphoma diagnosis.

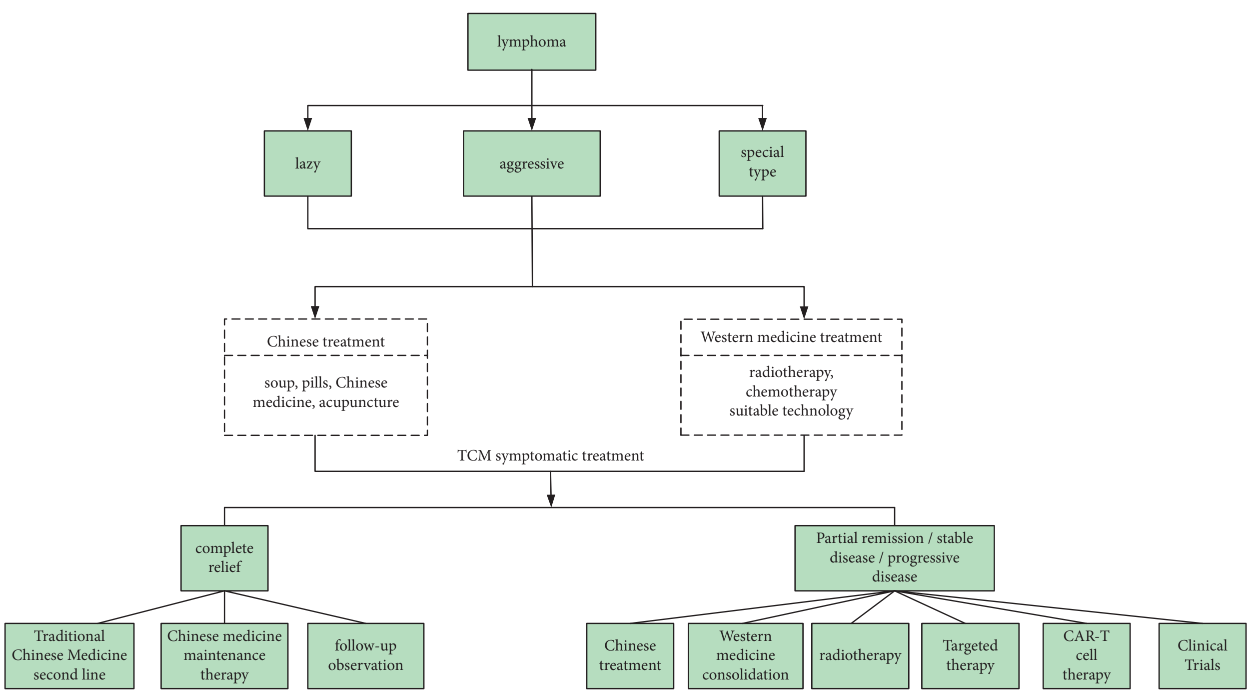

Figure 4: Treatment algorithm for lymphoma.

The process shown in Figure 4 combines the treatment methods of western medicine and traditional Chinese medicine to produce specific content. The western medicine treatment method is carried out through some physical and chemical techniques, and the integrated Chinese medicine treatment method is carried out according to some treatment methods and medicines of traditional medicine [15]. The combination of traditional Chinese medicine and western medicine treatment methods makes the treatment of lymphoma more effective. The unification of the above-mentioned treatment methods and the diagnosis of lymphoma can make it possible to make a more efficient treatment for this type of disease to the greatest extent. At the same time, according to the influencing factors of western medicine diagnosis results, it also has certain help for its diagnosis.

2.2. Introduction and Applications of Bayesian Algorithms. The content investigated in this paper is based on the sampling theory to study the clinicopathological characteristics and curative effect of lymphoma. The purpose of this discussion on the clinicopathological characteristics of lymphoma and its efficacy is to conduct a statistical study on a large number of existing cases. In this way, the medical effect and medical decision-making assistance for this type of diseases lacking more critical information can be carried out [16]. The principle of sampling is to extract some samples from a large data sample set. The same theory of Bayesian algorithm is also a statistical method based on probability theory, which defines the probability of occurrence of another condition under one condition. The probability of occurrence of two conditions in the clinical diagnosis and treatment of lymphoma can be corresponded here. This article will use the Bayesian algorithm network to discuss. This algorithm has the advantage of providing a powerful set of graphical tools to express probability-based domain knowledge.

2.2.1. Content and Principle of Bayesian Algorithm. The origin of Bayesian algorithm is a statistical algorithm used by mathematicians to explore the probability of certain events. The background of its extensive use is the mature application of computer science in the current era. The feature of this algorithm is that it has the function of inferring certain two trends for events, so as to realize the calculation of the probability of a specific event. It is also used in the medical field [17]. The content of the research includes the following three aspects: Bayesian network inference, Bayesian network learning, and Bayesian network application.

Supposing that there is variable $Q = \{q_1, q_2, \ldots, q_a\}$ for a set of events, its corresponding Bayesian algorithm contains a model with two elements. At the same time, the Bayesian algorithm of this event can be determined under formula as follows:

$$P(q_i|q_1, q_2, \ldots, q_{i-1}) = P\left(q_i|\varepsilon_{q_i}\right), \quad i = 1, 2, \ldots, a. \tag{1}$$

$P(q_i|\varepsilon_{q_i})$ in the formula (1) represents the probability distribution of the event corresponding to a single variable q_i in the event variable when the upper-level occurrence in the data set is a certain probability. At the same time, the probability of association between events in event set $Q = \{q_1, q_2, \ldots, q_a\}$ is shown in the formula as follows:

$$p(Q) = \prod_{i=1}^{a} P\left(q_i|\varepsilon_{q_i}\right). \tag{2}$$

Formula (2) is a corresponding expression presentation of the interaction between the various elements in the event variable set Q. Supposing that there is element q_1, q_2, q_3, q_4, q_5 in a random event, there is a certain causal relationship between element q_1 and element q_2, q_3, q_4, q_5. The formula for calculating the probability density of the occurrence of element q_1 is as follows:

$$p(q_1|q_2, q_3, q_4, q_5) = \frac{p(q_1, q_2, q_3, q_4, q_5)}{\sum_{q_1'} p(q_1', q_2, q_3, q_4, q_5)}. \tag{3}$$

In formula (3), q_1' represents the state that q_1 may appear in various situations, and this expression relationship shows the elements of random events in a direct form. In order to calculate the event more deterministically, formula (4) can be used to express it:

$$p(q_1|q_2, q_3, q_4, q_5) = \frac{p(q_1)p(q_4|q_1)p(q_5|q_1, q_2, q_3)}{\sum_{q_1'} p(q_1')p(q_4|q_1')p(q_5|q_1', q_2, q_3)}. \tag{4}$$

In formula (4), the relative probability calculation is carried out for each element in the random event, in order to realize the establishment of the Bayesian structure of the event. Compared with the direct calculation of formula (3), the calculation process is relatively simplified [18]. Next, the Bayesian algorithm will be structurally integrated, which is usually divided into three steps. First, according to the probability product of each element in the event, formula (5) can be obtained:

$$p(Q) = \prod_{i=1}^{a} p(q_1)p(q_2|q_1)p(q_3|q_2, q_1)\ldots p(q_a|q_1, q_2, \ldots, q_{a-1}). \tag{5}$$

In formula (5), for each element q_i in the random variable, there is an inclusion relationship between the superior nodes [19]. In order to make the calculation formula more accurate, the variable parameter α and the related variable set Q are now introduced, and the two have the following relationship:

$$f(q, \alpha) = p(q|\alpha)\varepsilon(\alpha). \tag{6}$$

Formula (6) expresses the spread of the probability between the set of random variables and the introduced parameters. The above dispersion structure can be explained to a certain extent, and the formula is as follows:

$$f(q, \alpha) = \varepsilon(\alpha|q)f'(q). \tag{7}$$

$f'(q)$ in formula (7) can be expressed as follows:

$$\begin{aligned} f' &= \int_{\Theta} f(q, \alpha) l\alpha, \\ &= \int_{\Theta} p(q|\alpha)\varepsilon(\alpha) l\alpha. \end{aligned} \tag{8}$$

Formula (8) expresses the arrangement of the elements in the event Q. From this, it can be known that, for the inference calculation of α, a new formula needs to be used for calculation, and its expression formula is as follows:

$$\varepsilon(\alpha|q) = \frac{P(q, \alpha)\varepsilon(\alpha)}{\int_{\Theta} P(q, \alpha)\varepsilon(\alpha) l\alpha}. \tag{9}$$

It can be seen from the above formula that the introduced parameter α has been continuously processed by the calculation formula, so the final problem returns to the influence of Q on the sample variable, and the relationship is expressed as follows:

$$\varepsilon(\alpha|q) \propto P(q|\alpha)\varepsilon(\alpha) = D(\alpha|q)\varepsilon(\alpha). \tag{10}$$

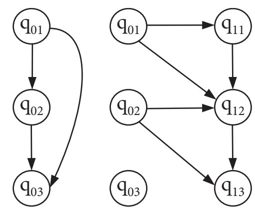

Figure 5: Initial state and transition process of indefinite Bayesian model.

Formula (10) is the continuous dispersion verification formula for the parameter. This formula involves only the main factor of sample variable $Q = \{q_1, q_2, \ldots, q_a\}$, so the subsequent calculation process is also simplified.

2.2.2. Establishment of Indefinite Bayesian Model. For the occurrence of an event, in this way, events with time factors can be better analyzed and processed. The indefinite Bayesian model is an improvement on the original Bayesian algorithm model [20]. In this regard, it is necessary to assume that the state of an initial variable is q_0, and the corresponding transition between elements is shown in Figure 5.

Figure 5(a) shows the arrangement of variables in the variable set in the initial state, which can be expressed by the following formula:

$$p(q_0) = \prod_{i=1}^{a} p\left(q_0^i \middle| pz\left(q_0^i\right)\right). \quad (11)$$

In formula (11), $pz(*)$ represents the parent variable of the initial state variable in the sample variable. Figure 5(b) is the corresponding transformation of the set variables in the two moments. The corresponding probability is calculated as follows:

$$p(q_t|q_{t-1}) = \prod_{i=1}^{a} p\left(q_t^i \middle| pz\left(q_t^i\right)\right). \quad (12)$$

In formula (12), q_t^i means that, at time t, the order of the connection points in the variable set is i, and $pz(q_t^i)$ means the variable one level above the variable q. The time variable involved above is relatively limited. On the basis of Figure 5(b), a time variable is added, which can be represented by Figure 6.

Figure 6 is a Bayesian model built for multiple times that can be used for coherently changing variable probability assignments [21]. The calculation of the probability distribution of each element in the sample set of variables is as follows:

$$p_r\left(q^1, \ldots, q^a\right) = p_{r_0}(q_0) \prod_{t=0}^{t_x} p_{r\longrightarrow}(q_t|q_{t-1}). \quad (13)$$

In formula (13), t^x is the set time node. Adding time as a variable in the indefinite Bayesian algorithm model makes the problem dealt with by the algorithm more pertinent. This paper is also of great help to the clinicopathological characteristics and curative effect of the lymphomas studied.

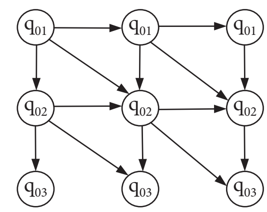

Figure 6: Indefinite Bayesian model based on multiple temporal states.

2.3. Principles of Adaptive Sampling Theory and Its Applications. For the discussion of complex issues such as the clinicopathological characteristics and curative effect of lymphoma, the MC algorithm with high accuracy is introduced and used. First, assuming that there is a variable Q, which contains several elements $q_1, q_2, \ldots, q_a$, the calculation formula for the probability of losing the utility of the variable in this sample is as follows:

$$p_f = \int_{\beta_f} \cdots \int f_{\overline{q}}(\overline{q}) l\overline{q}. \quad (14)$$

In formula (14), β_f represents the ineffective part of the sample set, and $f_{\overline{q}}(\overline{q})$ represents the probability corresponding to all variables in the sample variable. The actual application of the MC algorithm is based on sampling the probability of occurrence of the referenced variable and forward calculation of the probability that the sample may lose its effectiveness. Its expression is as follows:

$$\widehat{p}_f = \frac{1}{m} \sum_{j=1}^{m} R\left(\overline{q}_j\right). \quad (15)$$

In formula (15), $R(*)$ represents the guiding function, and its value is 0 or 1; m represents the number of samples drawn [22]. $\widehat{p}_f$ is the forward calculation for the sample. $\overline{q}_j$ is a variable with a ranking of j obtained by calculation according to the probability calculation formula $f_{\overline{q}}(\overline{q})$. The basic content of the sampling method in this paper is to calculate the corresponding probability by using the density function related to the sampling method, through which the probability of the ineffective sample area can be greatly increased. The corresponding formula is as follows:

$$p_f = \int_{\beta} \cdots \int R(\overline{B}) \frac{f_{\overline{q}}(\overline{B})}{s(\overline{B})} s(\overline{B}) l\overline{B}. \tag{16}$$

In formula (16), $s(\overline{B})$ represents the calculation formula of the sampling function for the sample variable, which also needs to meet some conditions. The expression formula of the conditions is as follows:

$$\begin{cases} s(\overline{B}) > 0, \\ \int_{\beta} \cdots \int s(\overline{B}) l\overline{B} = 1. \end{cases} \tag{17}$$

Formula (17) is the calculation formula of the probability corresponding to the sampling of the sample. The above calculation process also needs to calculate the probability of the ineffective part of the data system of the sample, which also needs to take into account different aspects, including ① increasing the sampling proportion of the effective part; ② increasing the probability of the occurrence of the sampling that contributes greatly to the ineffective part in the effective sampling. When the sample is collected, the data center of the sample can be determined by the formula as follows:

$$\begin{cases} f_{\overline{q}}(\overline{q}^*) = \max f_{\overline{q}}(\overline{q}), \\ h(\overline{q}^*) \leq 0. \end{cases} \tag{18}$$

In formula (18), $\overline{q}$ represents the component of variable q. Only when all individuals of variable q obey the normal distribution in the data, $\overline{q}^*$ can be solved by a certain algorithm. The solution formula according to the algorithm is as follows:

$$\begin{cases} f_{\overline{q}}(\overline{q}^*) = \max f_{\overline{q}}(\overline{q}), \\ h(\overline{q}^*) = 0. \end{cases} \tag{19}$$

Formula (19) represents the equation for interpretation. It can be seen from the sample variables that the samples belonging to the effective part will have a certain influence on the samples that are ineffective. For the process introduced by the above derivation, the boundary of the sample β_f that loses the small part is not clear. Therefore, for practical applications, it is necessary to perform a certain simulation calculation on the sampling theory, so as to speed up the recovery rate of the sample research. The method applied here is mainly to calculate the analog value of the sample, so as to broaden the use of the MC algorithm [23].

3. Experiments and Results Analysis

3.1. Clinicopathological Investigation and Outcome of Lymphoma. In the method, the accuracy of clinical diagnosis of lymphoma is introduced to a certain extent, including the influence of clinical classification of lymphoma on its accurate diagnosis. Among them, lymphoma is divided into four different types, and the reliability of the corresponding diagnostic results is also different according to the type of diagnosis. The results are shown in Table 1.

Reliability statistics for the four clinical types of lymphoma are presented in Table 1. From the statistical results in the table, it can be seen that, by referring to both type 1 and type 2, the corresponding reliability can be calculated to be less than 0.05, indicating that the reliability of the diagnosis of type 1 is better than that of type 2. Similarly, the calculated value of reliability between the two types of type 3 and type 4 is less than 0.05. It can be known that the reliability of the diagnosis result of type 4 is higher. In addition, in the method, there is also the impact of the detection method of the case on the clinical diagnosis of lymphoma. The statistical results are shown in Figure 7.

As can be seen from Figure 7, the results of the diagnosis are also different depending on the way the case is checked. It can be seen from the results in Figure 7 that the method of resection will have a more positive impact on the diagnosis results. Because of its deterministic result of 41, other modalities are less helpful for diagnosis. When diagnosing lymphoma, it is necessary to score the characteristics of its symptoms. After the determination of the scores of various objective symptom indicators, the cases are determined. The scoring results are shown in Table 2.

The meanings of the scores corresponding to each criterion in Table 2 are different. Among them, 0 is asymptomatic; 1 is mild; 2 is between mild and severe; and 3 is severe. The scores corresponding to the above items can be calculated by a certain method for the symptoms and signs of lymphoma. For its symptom characteristics, when the corresponding reduction is not less than 96%, it corresponds to the standard of recovery. At the same time, the range of scores when markedly effective is reduced by 63% to 96%. The range of scores from 26% to 63% represents the standard of effective treatment. The mastery of the basic information is based on the different intervention methods for the case. The corresponding results are shown in Table 3.

The number of cases in both groups in Table 3 is 100. Comparing the data in the table can obtain the calculation result of the difference value. $p = 0.571$ indicates that the underlying information between the two groups is not statistically significant. The interventions referred to here are conventional and unconventional in the treatment of lymphoma. In order to investigate the prognosis of lymphoma cases, it is necessary to evaluate different levels of the case. The relationships between the corresponding levels are as shown in Table 4.

Table 4 shows the difference in scores by the relationship between the various levels of lymphoma cases. The levels involved in the table that have an impact on lymphoma cases include five items, respectively, the physical and functional conditions of the case, as well as social family, emotion, and other content. Except for the first two levels, the rest are in a proportional relationship. In Table 4, the horizontal coincidence between the actual survey and the target survey is 0.92, and the vertical coincidence is 0.85 to 0.91. The results of the table show that prognostic-related treatment of cases can help improve the situation. According to the verification calculation for the collected data, the factor analysis method can be used. When the characteristic is larger than 1, different characteristic factors can be generated. The variance and related parameters of the sample factors are discussed. The results are shown in Figure 8.

Table 1: Statistical results of diagnostic reliability corresponding to the classification of lymphoma.

Type of lymphoma	Reliability classification				
	Certainty	Compliance	Suspicion	Descriptive	Total (example)
Type 1: Intranodal lymphoma	67	19	15	9	110
Type 2: Extranodal lymphoma	48	31	35	8	122
Type 3: DLBCL	70	10	8	5	93
Type 4: NDLBCL	41	17	20	2	70

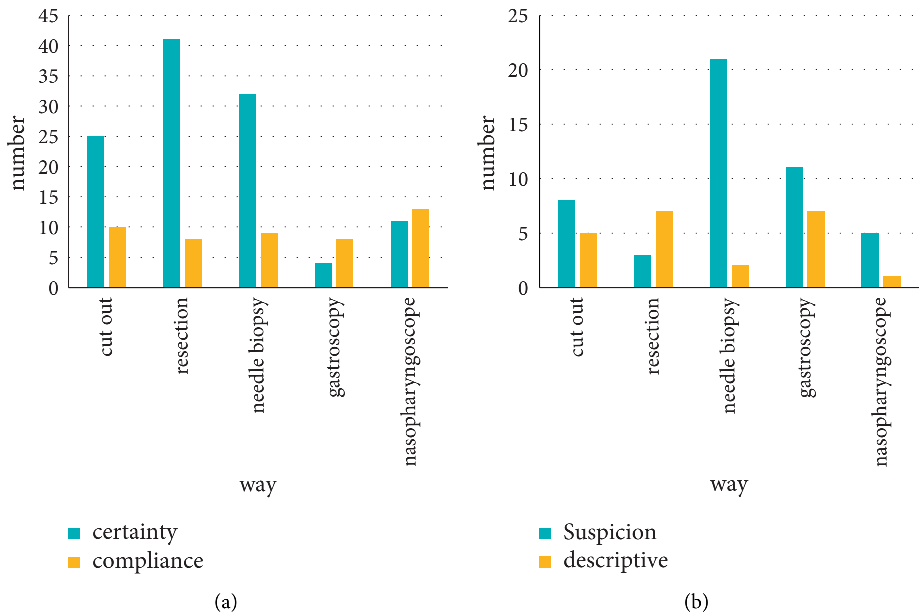

Figure 7: Impact of different inspection methods on diagnosis. (a) Deterministic results, (b) nondeterministic results.

Table 2: Lymphoma symptom scoring criteria.

Index	Nothing	Light	Moderate	Severe
Pain	0	1	2	3
Weakness	0	1	2	3
Night sweat	0	1	2	3
Fever	0	1	2	3
Skin itch	0	1	2	3

Table 3: Basic data comparison of cases.

Project	Intervention group	Control group
Male	55	58
Female	45	42
Disease stages 1, 2	40	25
Disease stages 3, 4	60	75
Complicated with chronic diseases	51	47
No chronic diseases	49	53

As can be seen from Figure 8, the method of factor analysis for the set can explain the feedback factor of the sample to a certain extent. It can be seen from Figure 8 that when the variance corresponding to all factors is 71.125%, each factor in the figure can be associated with different levels in the table.

The application of the Bayesian algorithm is actually the application of the probability method in mathematical statistics, and the corresponding use place is to calculate the probability that an object may occur between two conditions. Corresponding to the content of this paper is to calculate the probability of occurrence of different situations between the two conditions of diagnosis and treatment of samples obtained by sampling in a large number of case bases.

In the method section, the Bayesian algorithm of the sampling method used in this paper is introduced, and three different practical Bayesian models are used to verify the Bayesian algorithm. The specific conditions are shown in Table 5.

The data in Table 5 represent the specific structures of different types of Bayesian models, which are used in the medical field. In this experiment, the above three types of Bayesian algorithms are compared, and the sampling frequency of the samples selected by the algorithm is determined. The three Bayesian algorithms are tested 30 times and 60 times, and the results are shown in Figure 9.

The results in Figure 9 show that the accuracy of inference increases with increasing sampling frequency. It can be seen from the two figures that the first verification model has the best effect among the three, and the third one has a lower effect. This is because although the second node is

Table 4: Relationships at each level corresponding to lymphoma cases.

Level	Physiological condition	Social and family situation	Emotional state	Functional status	Additional concerns
Physiological condition	1	1	1	1	1
Social and family situation	0.181	1	1	1	1
Emotional state	0.537	0.371	1	1	1
Functional status	0.511	0.536	0.527	1	1
Additional concerns	0.781	0.187	0.512	0.412	1
Total score	0.861	0.551	0.735	0.732	0.975

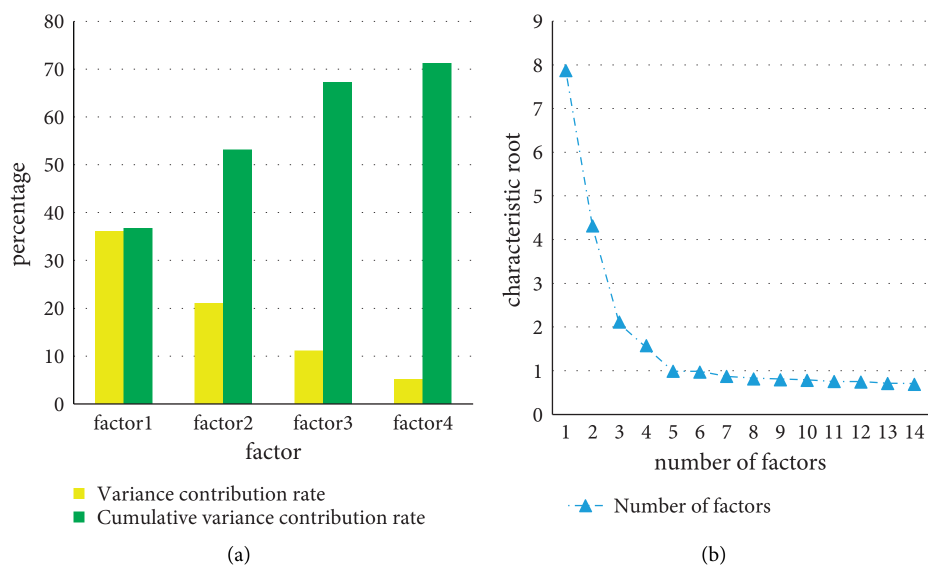

Figure 8: Factor analysis for the sample set. (a) Relationship between factors and variance, (b) relationship between number of factors and variables of characteristics.

Table 5: Bayesian three-class validation model parameters.

Network	Model Verify 1	Model Verify 2	Model Verify 3
Number of nodes	10	38	42
Number of directed edges	10	48	48
Total number of node states	20	724	120

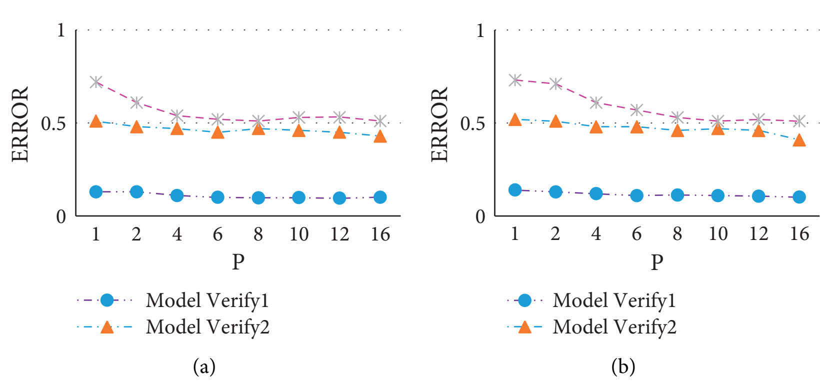

Figure 9: Relationship between different sampling frequencies and three algorithms. (a) Verification results of 30 times, (b) verification results of 60 times.

close to the third one, the node distribution of the third one is more complicated than the second one, so the error corresponding to the third one is larger.

The above experiments related to the Bayesian algorithm and adaptive sampling theory have been carried out. The results of these two experiments both show a result with a common direction; that is, when the number of cases to be sampled increases, the inferred relationship between the corresponding diagnosis and treatment will be more accurate. The purpose of the article's application of sampling theory is also to correlate clinical characteristics with the final treatment, and these two algorithms solve this problem well.

4. Conclusion

In this paper, the clinicopathological characteristics and treatment effects of lymphoma were studied in order to better correlate the diagnosis and treatment of lymphoma. The reason to explore this topic is based on the characteristics of lymphoma. The characteristics of this disease are based on its diagnosis and treatment, which are difficult to obtain at present, which makes a certain gap between its corresponding diagnosis and treatment. However, the past medical records have left a large number of data samples, and the associations contained in these samples after their data are important for continuing research on treatment and diagnosis. Therefore, this paper adopts the methods of Bayesian sampling theory and adaptive sampling theory and applies them to a large amount of case data, respectively. And by analyzing and processing some of the large number of cases, the correlation between diagnosis and treatment can be obtained. The application of the above methods makes good use of a large number of case samples in the past. These samples have a certain relationship in their diagnosis and treatment. Although it may be difficult to mine with a pure professional method, it will be aimed at the mathematics of processing large amounts of data. The application of statistical methods can make the final result more scientific.

Data Availability

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

Conflicts of Interest

The author declares that there are no conflicts of interest.

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