

Knowledge, Attitude and Practice Model Intervention on Pain in Patients with Advanced Lung Cancer Treated by Cytokine Induced Killer Cells

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Abstract

The pain of patients with advanced lung cancer is an important reason for many patients to give up treatment or produce psychological disorders. CIK biological therapy can only reduce a little pain, which is of little significance for patients. However, the knowledge, attitude and practice mode explored in this paper is to change the understanding of lung cancer from the patients themselves, and help them establish their beliefs and integrate into their daily behaviors Reduce pain. In this paper, 30 patients were selected and divided into two groups, 15 people in each group. The control group was treated with conventional treatment, and the experimental group was intervened with knowledge, attitude and practice mode. At the same time, visual analog score method was used to digitize the pain perception of patients, and SPSS statistical software package was used for data processing. The final comparison between the two groups showed that before the intervention, the knowledge score difference between the two groups was only 0.35, and after the intervention, the difference became 7.33. In terms of VAS score, the score of the control group was 48.2 (moderate pain), while the score of the experimental group was 32.9 (mild pain). The results of this study show that the model of knowledge, attitude and practice has a great effect on reducing the pain of patients, and the longer the intervention time, the more obvious the effect.

Keywords: KAP Model, Cytokine Induced Killer Cells, Patients with Advanced Lung Cancer, VAS Score

1. Introduction

The various tissues in the lung in the chest are extremely complex, so when the tumor invades the chest wall, it will cause severe pain. At this time, the nerves in the neck and controlling the upper limbs will also pass through the chest wall, and the nerves will start to ache due to the compression of the tumor. In most patients with advanced lung cancer, edema in the face and neck, bleeding, hoarseness and so on are very common phenomena.

Lung patients are too lack of knowledge of lung, mood anxiety, bad habits and so on are the inducements of various complications. In this case, it will not only increase the economic burden of

patients, but also affect the health and quality of life of patients to a large extent. Therefore, in order to improve the quality of life, we need to increase health education to prevent and reduce complications.

Garo Fano studied the role and mechanism of cytokine induced killer cells (CIK) and dendritic cells (DC-CIK) in Lewis lung cancer (LLC) cells. He observed the anti-tumor effect of CIK dendritic cells (DC) proliferation on LLC cells in vitro. DC and CIK cells from human peripheral blood were used as experimental group, while LLC cells were cultured in control group. The morphology of the cells was observed under the inverted microscope, and the proliferation of LLC was detected by MTT method. After comparing the two groups, it was found that DC-CIK could reduce the proliferation, adhesion and morphology of LLC cells. This provides important information for the mechanism of DC-CIK induced antitumor effect of LLC cells. This study also provides a theoretical and experimental

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basis for the clinical treatment of DC-CIK cells co culture. However, due to the small sample size, this experimental conclusion is not universally applicable (Garofano et al., 2019). Saravia explored the relationship between GCH1 gene polymorphism and cancer pain in patients with advanced lung cancer. He used gene chip technology to detect GCH1 and rs3783641 genes in 205 patients with advanced lung cancer and 150 controls. Visual analogue scale (VAS) was used to evaluate the pain degree before treatment, and the daily dosage of opioids was recorded. The association between GCH1 gene polymorphism and cancer pain in patients with advanced lung cancer was analyzed. His results showed that the incidence and score of pain in patients with AA, at and TT genes decreased gradually. Compared with AA gene, at and TT genes have low demand for opioids. The incidence of pain, score and drug demand of T gene carriers are far less than that of a allele. This study shows that the polymorphism of GCH1 gene is related to the degree of cancer pain in patients with advanced lung cancer, but in the process of the experiment, there is a certain chance, so the reliability of the experimental data needs to be further verified (Saravia et al., 2019).

In this paper, 30 patients with advanced lung cancer who were treated with cytokine induced killer cell biological therapy were selected, and the experimental group was intervened by the mode of knowledge, attitude and practice. At the same time, the visual analog score and SPSS statistical software package were used to digitize the pain of patients, so as to more clearly and objectively understand the influence of knowledge, attitude and practice mode.

2. Review of KAP Model and CIK

2.1. Knowledge, Attitude and Practice Model

(1) Definition

Information dissemination and behavior intervention is a kind of way of health education, which helps to understand the knowledge of health care, establish a healthy concept of life, and voluntarily adopt healthy behavior and living habits, that is to achieve the unity of knowledge, belief and behavior of education objects. Health education can transfer disease knowledge to patients and promote the change of patients' bad behavior. The change of behavior needs knowledge as the guidance direction (Fang et al., 2018). Knowledge can make a certain change in the behavior of patients, even if it is not necessarily positive, but it is the inevitable foundation for the change of behavior. Knowledge, attitude and Practice (KAB or KAP) model is a cognitive model, which is mature for behavior

change, or an important theoretical model for behavior change in health education. In this model, health care knowledge and information are positive and correct beliefs and attitudes, thus changing the cornerstone of healthy behavior. The change of human behavior is divided into three processes: acquiring knowledge, generating belief and forming behavior. Here, "knowledge" refers to the knowledge and understanding of health-related knowledge, "faith" should have correct belief and positive attitude towards life, and action means "action". The relationship among the three is: the basis is knowledge, motivation is belief, and behavior is the goal (Ruzov et al., 2020). Positive and correct belief and life attitude are the basis of knowledge and information such as diseases, and also change people's health behavior. The motivation of behavior change is belief and attitude. If you understand health knowledge and have positive and correct belief and attitude, you can form healthy behavior on your own. The main purpose of health education is to eliminate or control the risk factors affecting health, prevent diseases in advance, strengthen health and improve the quality of life.

(2) Application

The theoretical verification and commonly used method is to formulate the knowledge, attitude and practice questionnaire according to the research object and subject, to understand the related knowledge, belief and behavior of the population. Through the analysis of the questionnaire, the differences between groups are compared, and practical suggestions are put forward. The symptomatic implementation is planned and purposeful, so as to test the effect and summarize the experimental experience, so as to promote.

1) The theoretical model can be used in health education and health promotion. The effect of health education can be measured by this model: through the understanding rate of patients' information, the identification of health belief, the transformation of health information and the adoption of health behavior, the mode of three-level objectives can be changed, so that the actual effect can be expressed by changing the survey (Desai et al., 2019).

2) The influencing factor of the change of the theoretical model is to study the behavior of special groups. Objective to explore the influencing factors of health behavior of specific population, and spread these factors

symptomatically. After establishing the cognitive model of health, we compared the changes of health behavior of patients. For example, the rehabilitation process of elderly patients and some behavior changes of disabled people after receiving health information.

3) Health education can be targeted by designated health care providers and special doctors and patients. Through the study on the quality of life of patients with diabetes and the knowledge, attitude and practice of caregivers, it is found that the overall level of health knowledge, attitude and practice of caregivers is directly proportional to the quality of life of patients, which shows that the improvement of knowledge, attitude and practice of health knowledge of caregivers can better protect the life of patients. The mutually beneficial personnel should fully understand the health knowledge and be targeted (Mas et al., 2018). In daily work, most of the patients are willing to understand and accept health knowledge. After understanding the knowledge, they will be transformed into the belief of advancing, thus forming healthy behavior. Therefore, the comparison between before and after can obtain extremely meaningful research results.

2.2. CIK

The cytokine induced killer (CIK) cells isolated from human peripheral blood and amplified by interferon- γ , CD3 antibody and interleukin-2 in vitro are not only the surface markers of natural killer cells (NK) and T cells, but also the expression of activated receptor natural killer cluster 2D (NKG2D). The recognition of a class of stress-related ligands (NKG2D ligands) on the cell surface regulates the killing of tumor cells (Tafari et al., 2019). Therefore, in immunophenotypic analysis, there are many CD3⁺ cells and CD8⁺ cells, especially CD3⁺ and CD56⁺ cells, which have become a hot spot in tumor biotherapy in recent years (Zhao et al., 2018).

(1) Cell characteristics

Many secretory granules exist in CIK cells. After fusion with the target cells, the former changes into a transmembrane like structure, which further changes the cell osmotic pressure. The latter has serine protease such as trypsin and can form esterase activity to destroy the cell membrane structure. Together, they may cause tumor cells to become necrotic. CIK cells have many advantages, such as rapid proliferation, high antitumor activity and wide antitumor spectrum. However, CD3⁺ CD56⁺ double positive cells have the fastest proliferation and the strongest cytotoxic activity (Chen et al.,

2018).

Because CIK cells represent CD3 and CD56, respectively, NK cell like T lymphocyte (NKT) is another name for CD3⁺ CD56⁺ double positive cells. At the same time, it has the anti-tumor activity of lymphocyte T and NK cells and the advantage of non-MHC restricted tumor killing (Benjamin et al., 1996). In this way, CIK cells have stronger proliferation and antitumor activity than killer cells activated by lymphokines and anti-CD3 monoclonal antibody and tumor infiltrating lymphocytes.

(2) Clinical prospects

Due to the different proliferation and killing activities of CIK cells, recently, people began to carry out in vitro tests on a variety of tumors, including hematological malignancies and solid tumors (breast cancer, colon cancer, renal cell carcinoma, lung cancer, pancreatic cancer, etc.) and in vivo experiments on SCID mouse models. At present, CIK cells have potential applications in biological immunotherapy of lung cancer

1) The infusion of CIK cells can provide immunotherapy for the consolidation of clearance of minimal residual lesions after chemotherapy.

2) CIK cells cultured in vitro can be used to treat patients who cannot be treated with chemotherapy or special tumor patients with anti-chemotherapy drugs. CIK cells can be induced by white blood cells in patients.

3) CIK cells have the greatest potential in allogeneic bone marrow transplantation. In allogeneic bone marrow transplantation of AML patients, CIK cells can induce GVT effect without producing or only producing inhibited GVHD substances. The main direction of clinical research of CIK cells in the future will be these potentials.

3. Visual Analogue Scale

The visual analogue scale (VAS) of psychological method has been used to evaluate patients' subjective feelings for more than 90 years. Since pain is a subjective feeling of human beings, it can only be realized when an individual is suffering from pain. Therefore, the most accurate and effective pain assessment method in life is the patient's self-report (Liu et al., 2018). Therefore, quantitative analysis of this personal subjective feeling is necessary for clinical work. The pain evaluation is mainly to measure and evaluate the intensity and nature of all the patients' pain before, during and after treatment

(Liu et al., 2018). In this paper, the subjective feelings of patients with advanced lung cancer were objectified by using visual analog score method, and the patient's condition characteristics were accurately judged. Thus, with the most reasonable drugs and programs, the changes of patients' pain degree were monitored at any time, and the treatment plan of painful diseases was adjusted in time, so as to achieve retrospective comparison and reduce the errors in treatment.

(1) Scoring criteria

VAS is a 100 mm straight line with the number 0 at one end for "no pain" and 100 for "unbearable pain" at the other end. The intensity of pain felt by the patient is marked on a straight line, and the length from 0 to 100 points represents the patient's pain level. The evaluation criteria were: painless at 0-4 mm, mild at 5-44 mm, moderate at 45-74 mm, and most severe pain at 75-100 mm. Because patients' real feeling of pain can directly affect the treatment method and reflect the effect of treatment, therefore, in the process of clinical pain evaluation, VAS is widely used. In clinical practice, one of the scales of the measuring ruler is facing the patient, so that the patient faces the side drawing a straight line, and marks the most representative point of pain on the straight line. According to the scale on the back, the patient's pain score is obtained.

(2) Influencing factors of score

1) The type and direction of VAS are the influencing factors of score. The direction of VAS scale can be vertical and horizontal. In the same intensity of pain, the score of vertical scale is slightly higher than that of horizontal direction. But the coefficient of variation of the scale score in the vertical direction was larger. When there is a mark, number or scale of the midpoint on the VAS table, the score percentage of 0-9mm is lower, but it is higher when there is a term description. The different types and directions of VAS scale had no statistical significance on the scores between 10 and 90 mm, but the scores close to the two endpoints had certain influence on the evaluation of symptoms, with two different effects of upper limit and lower limit.

2) Age factor. For elderly patients with cognitive impairment, the implementation of VAS is more complex than NRs, and the error rate is also higher. VAS pain score is not recommended in elderly patients after surgery, because the error rate of VAS in vertical direction is lower than that in horizontal direction, and the surface effectiveness is also

higher. Children and the elderly are not easy to understand the abstract scale of VAS, so the application of VAS will be greatly limited.

(3) Hand to hand convenience. The left-hand marker is due to the left-hand marker. The convenience of left and right hand should be taken into account in VAS scoring.

VAS can not only be used to measure the intensity of pain, but also can be used to measure the degree of pain relief after receiving the corresponding treatment measures. However, it also has its own shortcomings and is not easy to operate for those patients with poor hands-on ability and poor cognitive ability, such as elderly and infant patients with poor mobility

4. Experiment Process and Method

4.1. Experimental Process

(1) Subjects

Thirty patients with advanced lung cancer were selected, including 16 males and 14 females. The age range of the experiment was from 50 to 60 years old. The subjects were conscious and could communicate normally. And it was clear that 30 patients had not carried out the knowledge, attitude and practice method before the experiment. 30 patients were randomly divided into two groups, namely the control group and the experimental group, 15 in each group. The control group was given routine nursing care with cytokine induced killer cell biotherapy, while the experimental group was intervened by professional personnel through the knowledge, attitude and practice mode on the basis of cytokine induced killer cell biotherapy.

(2) Experimental steps

On the first day of intervention, cognitive questionnaire survey was conducted on patients with knowledge of cytokine induced killer cell biotherapy, cancer-related pain, analgesic drugs, analgesic methods and psychological coping, so as to better understand the situation of patients. According to the results of the survey data analysis, to understand the reasons for the lack of knowledge of patients, as well as existing and potential problems. On the second day of intervention, the patients were explained in detail, the visual analogue pain score method was demonstrated, and the patients were taught to evaluate with VAS method. In the third to seventh day, the propaganda manual and video learning were distributed to let patients learn the three-step medication method and non-drug

analgesic method for cancer. Let patients learn to deal with irritability, anxiety, depression, fear, etc.

Before the intervention, the pain belief scale was used to assess the patients' beliefs on pain control, emotion, medicine, disability and tolerance. Through the results, interviews were used to help patients establish the belief of overcoming pain. The interview was divided into three times, 30-60 minutes each time. The first interview was at the time of admission, the second interview was before cytokine induced killer cell biotherapy, and the third interview was at the end of one course of cytokine induced killer cell biotherapy. Finally, guide patients to form behavior, help patients understand and analyze their own pain laws and changes, and encourage them to predict the time and degree of pain.

Before intervention and after one course of cytokine induced killer cell therapy, the degree of pain and satisfaction of pain control were evaluated by visual analogue pain score. SPSS statistical software package was used to calculate the experimental results.

4.2. SPSS Statistical Software Package

SPSS is a combined software package with data processing and analysis functions. It provides a statistical analysis method from simple statistical analysis to multi factor analysis. SPSS statistical analysis software includes a variety of statistical analysis methods. For example: basic statistical analysis of total amount and single variable, multidimensional frequency distribution analysis, correlation analysis, mean comparison and test, analysis of variance, regression analysis, clustering and discrimination, factor analysis, nonparametric test, etc.

T-test is often used to compare the mean value of two samples from normal population. T-test requires that the two samples to be compared come from the normal population. When the variance of the two samples is equal or unequal, the formula used to calculate the t value is different. If X_1 and X_2 are used to represent the mean values of two

samples, n_1 and n_2 are the number of observed measurements of the two samples, v_1 and v_2 are the variances of the two samples. When the square difference is uniform ($v_1 = v_2$) and the variance is not uniform ($v_1 \neq v_2$), the formula used to calculate the value of T is as follows:

When the variance is homogeneous:

$$t = (x_1 - x_2) / [s^2 (\frac{1}{n_1} + \frac{1}{n_2})]^{\frac{1}{2}} \quad (1)$$

$$s^2 = [(n_1 - 1)v_1 + (n_2 - 1)v_2] / (n_1 + n_2 - 2) \quad (2)$$

Inhomogeneous variance:

$$t = (x_1 - x_2) / (\frac{v_1}{n_1} + \frac{v_2}{n_2})^{\frac{1}{2}} \quad (3)$$

The homogeneity of variance was tested by F test. The corresponding zero hypotheses are that the variance of the two groups is equal. P value less than 0.05 indicates that the original hypothesis is negated at this level.

The calculation formula of F value is as follows:

$$F = MAX(v_1, v_2) / MIN(v_1, v_2) \quad (4)$$

5. Analysis of the Effect of Knowledge, Attitude and Practice Mode

5.1. Comparison of Postoperative Pain and Sedation between the Two Groups

The common symptoms of lung cancer patients were dyspnea, shoulder pain, nausea and vomiting, fever and other factors. The weight and pain of other parts were negatively correlated with overall life satisfaction ($P < 0.05$ or $P < 0.01$), and were most closely related to fever and related factors ($r = -0.31$). There was no significant difference between anorexia, cough, chest pain, fatigue and overall life satisfaction ($P > 0.05$). The postoperative pain and sedation of the two groups are shown in Table 1.

Table 1. Postoperative pain and sedation

Group	n	Sedation score		Pain score		Analgesic dose	
		12 hours after operation	24 hours after operation	12 hours after operation	24 hours after operation	12 hours after operation	24 hours after operation
Control group	15	2.9±1.1	2.3±0.8	1.6±0.2	2.0±0.6	40.0±4.8	58.3±0.12
Experience group	15	4.0±1.0	2.3±0.9	1.2±0.4	1.0±0.4	35.5±3.12	52.3±2.8

Table 1 show that the incidence of postoperative depression and pain in patients with lung cancer decreases over time, but the dosage of analgesics

increases over time. When the pain reaches a certain degree, it will often cause physiological and psychological changes of patients, leading to

the decline of patients' quality of life. It is often accompanied by a series of symptoms such as anorexia, lack of energy and sleep disorders. The symptoms interact with each other, and the impact of multiple symptoms on the quality of life of patients is more obvious than that of simple symptoms, which may affect the prediction of patients' quality of life. The incidence of depression at 24 hours after operation was significantly lower than that at 12 hours after operation ($P < 0.05$). The pain score in the control group increased 24 hours after operation, while the pain score in the observation group decreased ($P < 0.01$), and the dosage of analgesic drugs increased significantly in the two groups ($P < 0.05$). Compared with the control group at 12 hours and 24 hours after operation, the pain score and analgesic dose of the observation group were significantly lower ($P < 0.05$).

5.2. Comparison Results of KAP Scores

Lung cancer knowledge and behavior questionnaire was used to evaluate. The questionnaire includes three dimensions: knowledge, belief and behavior. Each dimension has 10 entries and each entry has 1-4 points. The higher the score, the better the level of each dimension.

Since knowledge is the basis for belief building and behavior change, patients should master disease knowledge, treatment methods, complications, pain assessment, pain relief, psychotherapy, nutrition, rest, exercise, etc. In order to let patients, understand comprehensively, we should take step-by-step measures, including lectures, leaflets, wechat group publicity, psychological counseling, family health support. The score of knowledge acquisition for patients is shown in Figure 1.

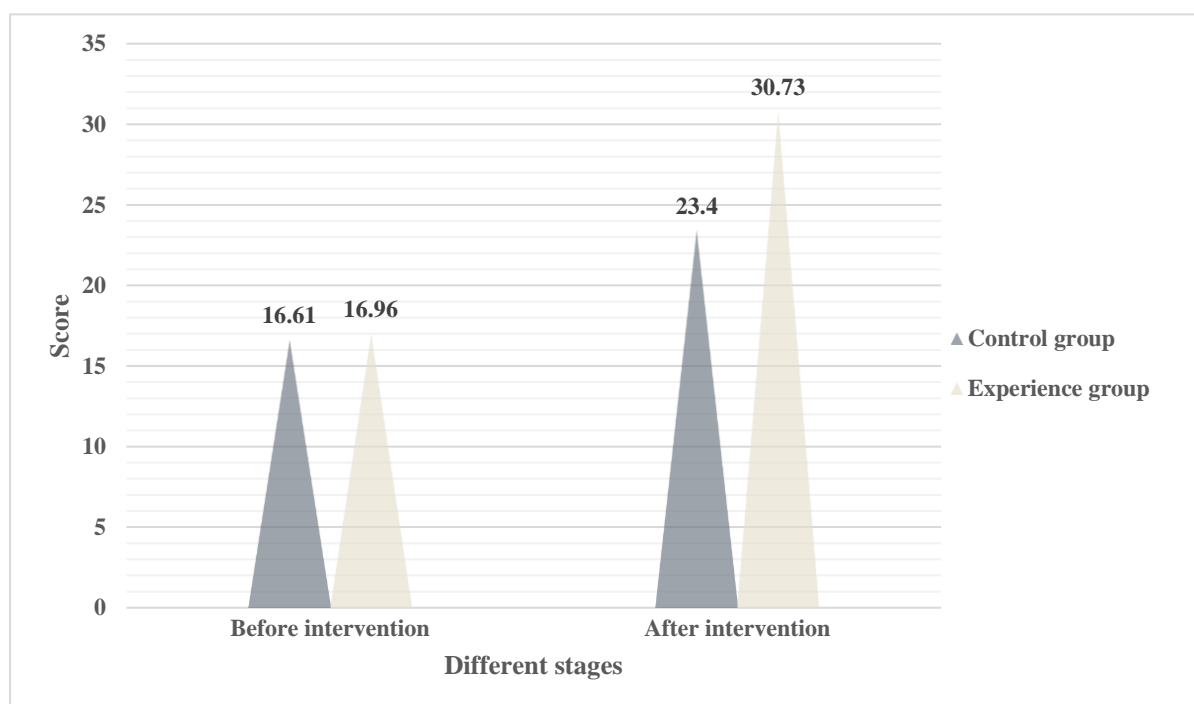


Figure 1. Comparison and analysis results of knowledge scores of two groups of patients

According to the data in Figure 1, there was no significant difference between the two groups in knowledge scores before intervention, and the difference was only 0.35. Although after the intervention, the score of the control group also increased to 23.4, but the score of the experimental group increased to 30.73, and the gap became 7.33. Therefore, the knowledge education intervention for 15 students in the experimental group had a more obvious effect.

After providing a variety of relevant knowledge, it

needs further supervision and strengthening. Through communication among doctors, patients, nurses and patients, patients can truly understand and accept different knowledge, and improve their compliance and self-service ability. Specific changes can be achieved by changing the understanding of knowledge (encouraging the patient's correct attitude towards the disease, encouraging the patient to talk about his or her inner thoughts, identifying and correcting bad behaviors over time, etc.) and enhancing

confidence (helping patients form healthy concepts, change their negative attitudes, and define their own health beliefs and trust through encouragement and appropriate guidance) And other ways to cultivate faith. The score results of patients' beliefs are shown in Figure 2.

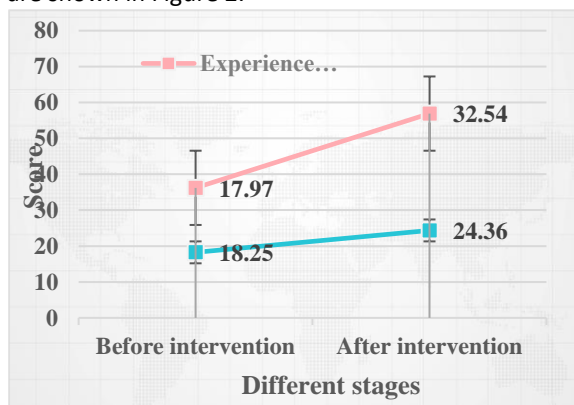


Figure 2. Comparison and analysis results of belief score between the two groups

It can be seen from the data in Figure 2 that the belief gap before the intervention was small, 18.25 in the control group and 17.97 in the experimental group. After the intervention, the data of the control group became 24.36, and the score of the experimental group increased to 32.54.

In the aspect of behavior development, help patients define correct health behaviors, such as healthy diet (cooperate with dietitian to formulate reasonable diet, eat more anti-cancer food, promote diet), treatment compliance (follow the doctor's radiation and chemotherapy instructions), pain management (write pain diary, progressive muscle relaxation training, control by three-step analysis), improve sleep (play Relax music, guide meditation, create a good sleep environment). The behavioral scores of lung cancer patients are shown in Figure 3.

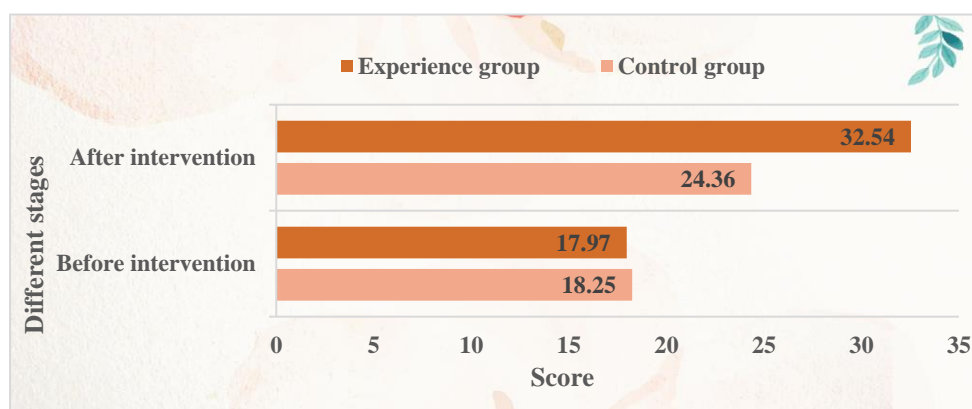


Figure 3. Comparison and analysis results of behavior scores between the two groups

As shown in Figure 3, before the intervention, the behavior score of the experimental group was lower than that of the control group, but after the intervention of the knowledge, attitude and practice mode, the behavior score of the experimental group was 8.18 higher than that of the control group.

5.3. VAS Total Score and Pain Control Satisfaction

Pain, treatment and adverse reactions caused by advanced lung cancer are important factors to reduce the quality of life of patients. Because of the severe pain of patients with advanced cancer and the lack of knowledge, belief and behavior related

killer cell biological therapy cytokines are related to cancer pain, and the pain control of patients is poor, which seriously affects their quality of life. Through the intervention of knowledge information model, the "knowledge" of patients was improved through progressive health education, so as to obtain the relevant knowledge and information about killer cell biotherapy, including the cause and duration of cancer pain. The enrichment of knowledge changes the patient's attitude towards pain and urges him to take positive actions to control and relieve pain. The satisfaction of pain control after intervention is shown in Table 2.

Table 2. Patient satisfaction with pain control

Group	Number of cases	Very satisfied	Satisfactory	satisfied	Dissatisfied	Very dissatisfied
Control group	15	3(20%)	5(33.4%)	5(33.4%)	2(13.4%)	0(0%)
Experience group	15	7(46.7%)	6(40%)	2(13.4%)	0(0%)	0(0%)

According to the data survey results in Table 2, under the intervention of knowledge, attitude and practice model, the satisfaction of patients in the pain control intervention group was higher than that in the control group ($P < 0.01$). This shows that compared with the traditional pain management and nursing, the intervention of knowledge attitude behavior model can improve the satisfaction of patients with pain control.

At present, the three-stage pain therapy for cancer patients can effectively relieve the pain symptoms of

some cancer patients. However, due to various cognitive misunderstandings, some patients do not take medicine according to the doctor's advice and are unwilling or unwilling to adhere to long-term medication, resulting in poor treatment effect. As one of the models to change human health-related behavior, knowledge attitude behavior model can effectively promote patients' self-management behavior; improve drug compliance, so as to reduce the pain of patients. The total VAS score of the two groups is shown in Figure 4.

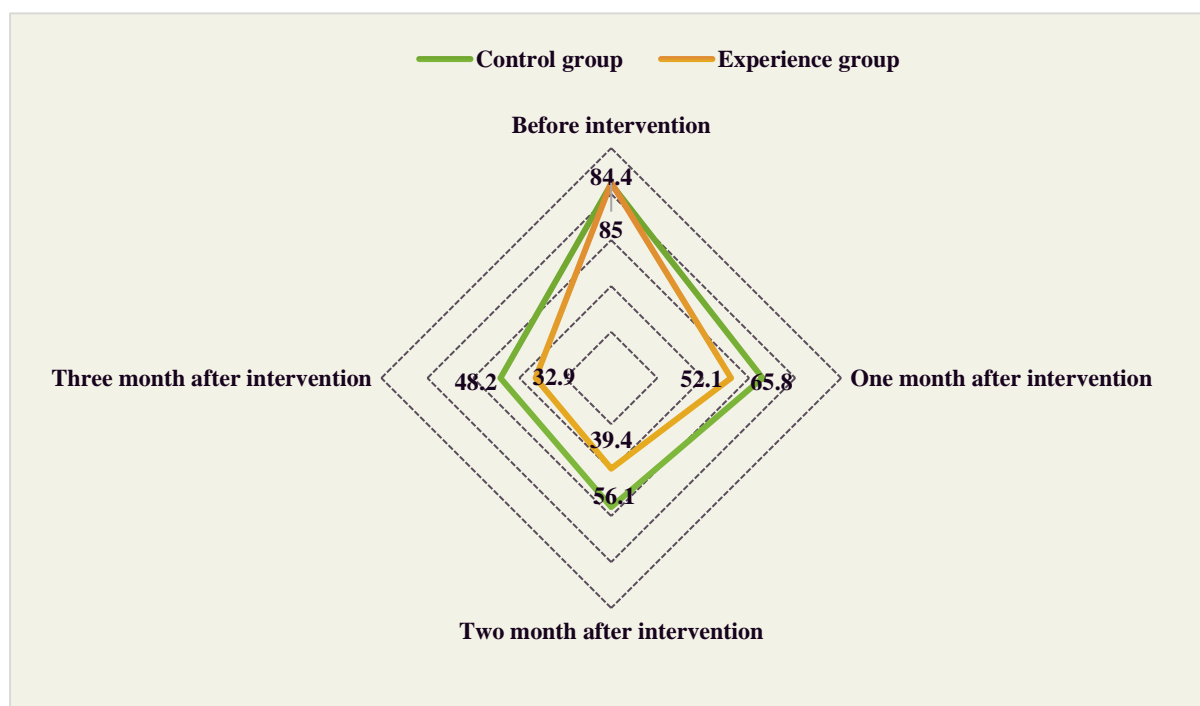


Figure 4. VAS scores of two groups before and after intervention

According to the data in Figure 4, the VAS scores of the two groups before intervention were not statistically significant ($P > 0.05$). The VAS score of the intervention group was lower than that of the control group ($P < 0.01$), indicating that the degree of pain in the intervention group was lighter than that in the control group, indicating that the knowledge, attitude and practice model intervention can reduce the pain degree of patients more than the conventional pain management and nursing.

6. Conclusions

In fact, pain is one of the most unbearable symptoms in patients with advanced lung cancer. The pain caused by the patient's condition, treatment process and related adverse reactions is the reason for the decline of quality of life. Although cytokine induced killer cell biological therapy can

reduce the pain of patients with lung cancer, but for patients with advanced stage, the effect is very little, the pain is still full of patients' life, this pain will be associated with the patient's pessimism and negative emotions, which is very unfavorable for the treatment of lung cancer patients. Therefore, effectively reducing the pain of patients is not only conducive to the improvement of patients' quality of life, but also indirectly prolongs the life of patients.

In this study, visual analogue scale was used to study the effect of knowledge, attitude and practice model intervention on pain in patients with advanced lung cancer treated by cytokine induced killer cells. First of all, 15 patients in the experimental group had a general understanding of the knowledge, attitude and practice model and visual analog scoring method. In the

following period of time, nurses and relevant psychologists explained the relevant knowledge of lung cancer to the experimental patients to help them establish the belief of anti-cancer, and finally used VAS data to treat the pain of patients. Through the comparison of the two groups, we found that the experimental group with improved knowledge, belief and behavior had a relatively low pain score in the final VAS score, and the score dropped to 32.9 after 3 months. According to the VAS score standard, the pain of the patients who used the knowledge, attitude and practice model decreased from severe pain to slight pain before the intervention, and the intervention effect was obvious after three months. At the same time, the control group of patients after three months of conventional treatment score was 48.2 points, still moderate pain.

From the experimental results of this paper, the intervention of knowledge, attitude and practice model is of great benefit to reduce the pain of patients with lung cancer, and the effect is more obvious with the passage of time. However, there are still many obstacles in the promotion and popularization of the model of knowledge, attitude and practice, and the requirements of medical staff have been improved accordingly. In addition, although the number of samples selected in this paper is small and cannot represent the situation of all patients with advanced lung cancer, it has a certain reference value for the study of reducing the pain of patients.

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