

Factors Influencing Compliance with Auricular Acupressure Therapy in Patients with Cancer-Related Fatigue

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Background: Patient compliance can influence the effect of auricular acupressure used to manage cancer-related fatigue (CRF).

Objective: To explore the barriers and facilitators affecting patients' compliance with treatment.

Methods: The maximum difference sampling method was used to conduct qualitative interviews with 11 CRF patients undergoing auricular acupressure therapy. The interview data were analyzed by Colaizzi's seven-step analysis.

Results: Convenience and acceptability of the therapy, preliminary effects of its implementation, fully believing in the benefits of auricular acupressure and being habituated to the therapy, help and reminder from family members are the facilitating factors to improve patient compliance with auricular acupressure therapy, while the hindering factors include having doubts about the effect of acupressure resulting in interruption, having limited access to medical resources, deterioration of the condition resulting in self-abandonment, and weak family support.

Conclusion: In clinical nursing practice, attention should be paid to the analysis of the facilitating and hindering factors during the implementation of auricular acupressure therapy as well as the development of targeted intervention measures to improve patient compliance so as to enhance the effectiveness of auricular acupressure.

Keywords: auricular acupressure, compliance, cancer-related fatigue, influencing factors

Introduction

Cancer-related fatigue (CRF) is prevalent in cancer patients undergoing chemotherapy, which is the most important factor in lowering patients' quality of life, affecting their tolerance to chemotherapy, and even interrupting their treatment.¹ Studies have found that auricular acupressure therapy can alleviate CRF, but the patient's compliance with the therapy directly affects the effect of intervention.²⁻⁵ However, currently, there is only scarce research on factors affecting the compliance with auricular acupressure. Patient compliance is the degree of compliance of the patient with the study protocol in clinical trial implementation. Only when the final number of cases is no less than 80% of the total number of trials entered, the entire clinical trial can be meaningfully and statistically analyzed.⁶ Therefore, patient non-compliance or poor compliance will bias the results of the clinical trial while good compliance will facilitate implementation of the trial, guarantee the reliability of test results, and at the same time save time, cost, etc.^{7,8} This study

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intended to use the phenomenological research method in qualitative research to explore the facilitating and hindering factors affecting patient compliance during the implementation of auricular acupressure therapy, in order to provide reference for relevant clinical practice.

Methods

Participants

According to the patient compliance with auricular acupressure therapy, CRF patients who underwent the therapy were selected using the maximum difference method to go through in-depth interviews in the Department of Respiratory Medicine in a first-class general hospital in Suzhou from December 2016 to August 2017. Inclusion criteria for patients: 1) lung cancer patients treated with chemotherapy who received auricular acupressure therapy due to CRF; 2) good communication skills; 3) voluntary participation in the study. Auricular acupressure delivered to the participants in this study was using Semen Vaccariae (SV) and magnetic beads to apply pressure to five ear acupoints (the lung, Shen Men, subcortex, liver and spleen). For details see our previous study.⁹ Prior to the interview, the consent of the interviewee was required, and the written informed consent was signed. The number of interviewees was saturated until there were recurring data, and no new topic appeared.

Establishing the Interview Outline

Interview questions were designed according to the purpose of the research, combined with literature review. The interview outline was finalized through consultation with experts and synthesizing their opinions: 1) In the past three courses of treatment, have you been able to apply daily auricular acupressure and regular replacement of ear patches? 2) What made it possible to comply with daily auricular acupressure? (Or can you explain why you were not able to continue the treatment?) 3) Can you tell me about the changes in your body and mindset since the beginning of our auricular acupressure therapy study? What is the impact on your daily life and illness? 4) What inconvenience have you encountered during the whole auricular acupressure process? 5) What do you think needs to be improved and perfected during the whole auricular acupressure therapy? 6) After the study is over, will you continue to do it? Please share your opinion.

In the interview, the interview outline, as a major reminder, was not static. It could be adjusted flexibly

according to the specific answer of the patient, and appropriate communication skills such as listening, empathy, repetition, clarification and response were used to reflect the patient's opinion and attitude as accurately and comprehensively as possible. The interview place was selected according to the patient's wishes, to ensure a comfortable, quiet, well-lit environment and a certain privacy. Interviews were recorded throughout the whole process and the patient's nonverbal expressions were also noted down. The interview time was kept at about 30–45 minutes.

Data Collection and Analysis

The consent of the interviewee was obtained and the appropriate interview time and place were determined. The informed consent form was signed before the interview. The interview time was 45–60 minutes per person. The semi-structured interview outline was used for one-on-one in-depth interviews and the content was recorded by a recording pen. After all the interview data were sorted, we returned to the interviewees for verification. At the same time, medical documents related to CRF management in their hospital were collected to supplement the interview content and reconfirm its authenticity.

The recorded content was converted into text and archived within 72 hours after the end of each interview. The data analysis was performed using Colaizzi's seven-step analysis of phenomenological data:¹⁰ 1) to carefully read all interview transcripts; 2) to extract statements of great significance; 3) to encode recurring viewpoints; 4) to cluster the themes after coding; 5) to develop a detailed, exhaustive description; 6) to discern and extract similar views; 7) to return to the interviewee for further verification and validation. The researchers incorporated similar viewpoints in a certain order. Based on the interviewer's observation record of the non-verbal behavior of the interviewees, combined with their own understanding and reflection, they finally formulated a structure of themes with intrinsic connectivity.

Measures to Ensure the Authenticity of Data

Patients with different degrees of compliance were selected as the interviewee by the maximum difference sampling method in order to make the sample representative; during transcription of the recorded content, one researcher first transcribed and then another researcher

checked; the data were returned to the interviewees for validation before content analysis; the Combination method was used to collect data (interview method, observation method) and data analysis (continuous and repeated data analysis, and the results were constantly compared with the original data) was conducted by two researchers (combination of researchers).¹¹

Ethical Issues

This study was approved by the Ethics Committee of the interviewees' hospital. Each interviewee signed an informed consent form prior to the interview and registered their general demographic data. During the interview, interviewees may withdraw from the interview at any time without any reason, which did not happen in this study.

Results

Characteristics of Participants

A total of 11 patients were interviewed. Their general information is shown in Table 1.

Factors Influencing the Adherence to Auricular Acupressure Therapy-Facilitating Factors

The Therapy Was Convenient and Easily Acceptable

Auricular acupressure therapy has the advantages of being convenient, economical and easy to operate, and it does not affect the daily life of patients. The interview results show that these features are important reasons for patients to accept this therapy as well as facilitating factors for them to continue to adhere to it during future implementation. All 11 interviewees agreed that auricular acupressure was a common Traditional Chinese Medicine (TCM) nursing technique that was easy to learn.

Interviewee F: I did this in the TCM hospital a couple of years ago because of irregular menstruation. It was very simple. I persisted for a while and the effect was quite satisfactory. Now I am applying this to relieve fatigue, which I heard for the first time, but I will try it because there is no harm anyway.

Interviewee A: (Auricular acupressure therapy) I have heard of it before, but I have never done it. I was worried that I might not be able to use it at the beginning. After you have showed us how, it turns out to be less complicated than I expected. You see that my husband and I both learned very well. This is reassuring.

Interviewee C: Now that I'm sick, I cannot do cooking, cleaning, and other household chores. I am quite idle and you offer to do this for us for free. It is not difficult. Of course, I will try it. It is a rare opportunity.

The Preliminary Effects of Therapy Implementation Could Improve the Long-Term Compliance of Patients

Those who have significant improvement in physical and mental discomfort such as fatigue, sleep disturbance, anxiety, and depression after implementing auricular acupressure therapy are more likely to adhere to subsequent interventions.

Interviewee D: I think this ear patch works for me. I didn't feel anything at first, but I didn't give up. After two courses, I don't think I am as tired as before. Before this therapy, I always wanted to lie down and did not

Table 1 General Information of Interviewees

Code	Gender	Age (Years)	Education	Pathological Type	Pathological Staging
A	Female	48	Junior high school	Adenocarcinoma	IV
B	Female	58	Elementary school	Adenocarcinoma	IV
C	Female	49	Junior high school	Squamous cell carcinoma (SCC)	IV
D	Female	62	Elementary school	Adenocarcinoma	II
E	Male	67	Elementary school	SCC	III
F	Female	39	Junior high school	Adenocarcinoma	IV
G	Male	63	Elementary school	SCC	IV
H	Female	56	Junior high school	Adenocarcinoma	IV
I	Male	66	Junior college	SCC	IV
J	Female	56	Junior college	SCC	III
K	Female	65	Junior high school	Adenocarcinoma	IV

feel like moving at all. Now I will go out and do some simple chores.

Interviewee G: To be honest, there was some doubt when I started doing it, but it worked after a period of time. Before this, it was hard for me to sleep for four or five hours in a row at night. I can sleep for about 6 hours now. I feel I sleep better than before and I have more energy during the day. I have to say that I very much approve the TCM techniques of our country. Although it can't cure my disease, it's still good that it can alleviate my symptoms. No need to take medicine, also no side effects.

Interviewee H: Since participating in this research, my biggest gain is that my mind is much calmer. I used to get angry easily with my husband and friends just because of some trivialities. Now it has been slightly improved. I am not as irritable as before. I am willing to receive such treatment.

Interviewee K: Now, whether I am watching TV at home or doing other things, I can concentrate. I fall asleep faster at night. It is now rare for me to be bored and upset without any reason, or keep having random thoughts. I feel quite lucky that I can have such treatment.

Patients Fully Believed in the Benefits of Auricular Acupressure and Became Habituated to It

After applying auricular acupressure for a period of time, the respondents increasingly approved its benefits, and their faith is strengthened. They fully believed that auricular acupressure therapy can alleviate fatigue, improve sleep, relieve bad mood, and enhance the quality of life to a certain extent. Some respondents had an increasingly higher degree of compliance, and they became habituated to the therapy.

Respondent B: When you have this disease, there is nothing you can do. You've got to be optimistic. This therapy is helpful to me and I will insist on doing it. Anything that makes me a bit more comfortable helps.

Interviewee G: It's not a very troublesome thing. It actually is quite handy and good for me. I've got used to it now, and I sometimes pinch my ears subconsciously.

Interviewee A: It has been three years since I was diagnosed (with lung cancer). I am lucky compared with those who lived only a few months since they got the disease.

I believe in my doctors. I am willing to try things as long as they are helpful to me, let alone the fact that you care about me and often give me health instructions. I will insist because I want to live a few more years.

Help and Reminder from Family Members Served to Improve Patient Compliance

During implementation of the therapy, help and supervision from the family members not only bring an invisible motivation to the patients, but also directly make them complete the process in a more standardized and smoother way. Six respondents admitted that their family's company and encouragement made them more confident.

Interviewee F for example: My family is very concerned about me and my treatment. They advise me to listen to what the doctor says and help me to check whether the ear patches are in the right place. They also remind me to change them on time.

Interviewee C: My family and friends care so much about me. For them, I've got to be motivated and do well.

Hindering Factors

Patients Had Doubts About the Effect of Acupressure, Resulting in Interruption of Therapy

Due to the combined effect of progress of the disease, the side effects of chemotherapy drugs, economic factors, environmental factors and so on, some lung cancer patients suffered from heavy physical burden and psychological pressure. They were eager to relieve their symptoms through certain treatment, so they had high expectations for the effect of auricular acupressure. But when the actual results did not reach their expectations within the scheduled time, they questioned the therapy and even refused to participate.

Interviewee J: I very much believed in it at first, but I didn't feel anything after one month. Nothing has changed. This method is useless to me. I don't want to do it anymore.

Interviewee I: After chemotherapy, many people have adverse reactions. I have been wondering, 'Can it (auricular acupressure) really alleviate fatigue, just by stimulating acupoints?'

My friends say that I cannot be cured by Western medicine, let alone TCM. I think so. (ridicule)

Patients Had Limited Access to Medical Resources

Since tumor tissues invade the patient's respiratory system and affect their oxygen supply, lung cancer patients have more severe symptoms than patients with other diseases, and are more likely to experience fatigue. Some patients have limited access to medical resources due to their place of residence and transportation, which results in their slacking off.

Interviewee K: I know this is effective to some extent, but it takes more than half an hour for me to go from home to the hospital by bus. It's a little too far and there are no other hospitals nearby. Sometimes when I had other things on my agenda, I had to delay the replacement by a few days. I had the same patch on for 5 or 6 days before replacement twice.

Interviewee E: How I wish our community hospital doctors had some TCM knowledge. If I do not understand something, I can ask them about it. It will be more convenient and easier for me to

The Patient's Condition Deteriorated, Resulting in Self-Abandonment

Repeated and rapid progress of the disease had greatly undermined the patient's self-confidence, causing the patient to fall into despair, thinking that everything they did was meaningless, which resulted in self-abandonment, and even the idea of suicide.

Respondent I: No matter what treatment I had, it's just useless. This disease cannot be cured. Living is to suffer, whatever. (helpless expression)

Patients Had Weak Family Support

Some interviewees stated that they needed family support during the auricular acupressure process, but they could not get enough support for various reasons.

Interviewee D: I am living with my son now. He has to make money to support his family and is very busy every day. This is not easy. Sometimes he has no time to take care of me. I came to be hospitalized on my own this time. Young lady, you care about me and have helped me a lot, otherwise

I might not be able to go through the whole process.

Interviewee H: This disease has brought a lot of pressure to all aspects of life. My husband has become very irritable. I don't know when this will end. We will quarrel over trivialities. We have a family conflict and I can't count on him. I believe in you, and as long as the conditions permit, I will come to the hospital to let you apply the ear patches. Of course, if your family could care more about you and spend more time with you, it would be better and I would be more motivated.

Discussion

When it comes to the management of CRF symptoms, non-pharmacological TCM interventions such as auricular acupressure, acupuncture and moxibustion have gradually attracted the attention of researchers and are gradually accepted by patients, mainly because they are user-friendly, economical and practical, and have mild toxic and side effects.^{12,13} However, TCM interventions generally take 2–3 months to achieve significant clinical efficacy, during which patient compliance directly affects the effectiveness of TCM interventions;¹⁴ in the actual clinical intervention process, patients may interrupt the treatment for various reasons.

It can be concluded through qualitative interviews with participants that patients who adhered to the entire research process have the following characteristics: a strong belief, forming a habit, increase in physical and psychological comfort, and family support. These factors are important conditions for patients to adhere to auricular acupressure. In contrast, patients who withdrew from the therapy stated that they questioned the effects of acupressure, had limited access to medical resources, fluctuating conditions, and weak family support. These hindering factors led to the patient's refusal to continue with the study. Among these factors, the most significant impact on patients lies in the "benefits" of TCM interventions that patients experienced at the beginning. Chen et al¹⁵ suggested that patient compliance with the treatment is related to patients' health beliefs—the smaller the perceived benefits of treatment, the poorer their compliance. Tola et al¹⁶ found that when patients have doubts about the necessity and effectiveness of a certain treatment, their compliance with the treatment will be reduced. Throughout the study, no patients discontinued treatment because of complications of the acupressure itself (for example, no untoward

side effects, no skin lesions, no infection, etc). In fact, when auricular acupressure therapy is used to treat CRF, its mechanism lies in adjusting the related meridian functions by stimulating the auricular point, and thus facilitating the flow of Qi and blood, regulating Yin and Yang in internal organs, and finally relieving the patient's fatigue. This process is relatively slow. If the patient expects to achieve a "significant" effect in a short period of time, it is most likely they will abandon the subsequent treatment because they have doubts about its effectiveness. This reminds us that in the process of intervention, more attention should be paid to health education and psychological counseling for patients. Tutorial manuals and micro-videos on auricular acupressure knowledge can be used in combination to explain to patients how to apply auricular acupressure, its relationship with the disease, benefits of the therapy so as to boost the patient's confidence, strengthen their belief in the implementation of auricular acupressure, and promote behavioral change to form a habit. We should also teach patients to correctly understand the disease and effect of treatment, share with them cases of successful treatment in order to help them maintain an optimistic attitude and eliminate negative emotions such as self-abandonment. Patients should be informed that auricular acupressure therapy is a non-invasive, non-toxic physical method with no side effects. It takes effect relatively slowly. It is normal for patients to perceive no change at first, and its effect should be evaluated after they have adhered to it for a while. Besides, our interviews found that in this long-term, continuous process, the companionship and support of the patient's family are of vital importance to the patient, not only providing them with timely help, increasing their motivation for treatment, but also serving as supervisor and reminder. Therefore, in the initial stage of intervention, we should mobilize family members of the patient to actively participate in the treatment and establish a relationship of trust with them. Follow-ups should be scheduled regularly to keep us updated about the patient's condition so as to provide instructions and consultation, so that patients get strong support in the whole auricular acupressure process, and thus improving patient's compliance with treatment and quality of life.

This study has certain limitations. The samples of qualitative research were only selected from one research center. The tumor patients included were all lung cancer patients, which makes the representativeness of the sample limited. A multi-center study will be carried out in future research.

Conclusion

In clinical nursing practice, attention should be paid to analyzing the facilitating and hindering factors during the implementation of auricular acupressure therapy. For the modifiable factors such as belief in the intervention measures and family support system, etc, targeted interventions should be developed to improve patient compliance and finally enhance the effectiveness of acupressure therapy.

Ethical Approval

All procedures performed in this study involving human participants were in accordance with the 1964 Declaration of Helsinki and its later amendments. Ethical approval to perform the study was obtained from the Ethics Committee of the First Affiliated Hospital of Soochow University approved the study protocol (Ethical Approval 2017028).

Informed Consent

Informed consent was obtained from all individual participants included in the study.

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Disclosure

The authors declare that they have no conflicts of interest regarding this study.

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