

Effect of cognitive behavior therapy based on the health education pathway on psychology of Chinese papillary thyroid carcinoma patients: A randomized controlled trial

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Supplementary Material S1

How to implement the cognitive behavior therapy based on health education pathway (CBT-HEP) intervention

Participants in the experimental group received CBT-HEP intervention. CBT was a very common method to relieve psychological problems. Based on the core principle of CBT

(<https://www.apa.org/ptsd-guideline/patients-and-families/cognitive-behavioral>), the CBT-HEP process of this study was set as follows: 1. Recognizing the core problems, 2. Stating your own thinking, 3. Recognizing related behaviors, 4. Correcting wrong thinking and behaviors by health education, 5. Self-practice and consolidating related knowledge. The whole process was carried out in the order of the above steps and lasted about 30-60 minutes.

Step 1. Recognizing the core problems. The researcher guided patients to be aware of the problems that most troubled them and to speak up. The following statement can be used: "Hi, how are you? Do you have any problem that is bothering you, or have

some worries and fears on your mind, you can tell me, and we talk about it, maybe some helpful advices can be gave to you." The most important thing in this step was to let the patient realize that the researcher can be trusted and good, and at the same time, let the patient know their main problems clearly. The most troubling issues for most hospitalized patients were those related to thyroid cancer disease.

Step 2. Stating your own thinking. In this step, the researcher continued along the patients' lines, asking them about their autonomous thoughts on their core issues. It would be better to record the above information. Some words can be used: "Ok, How do you think about these main problems you have mentioned?" The patient's own thoughts were usually relatively negative, due to the lack of understanding of the relevant knowledge.

Step 3. Recognizing related behaviors. Then, researcher continued to help patients realize what changes have taken place in their own behavior under the influence of their own thoughts. The researcher could say: "Well, let's talk a little bit about what happens to your body and behavior under the above thought?" Under the influence of negative thoughts, the patient's body and behavior would develop some problems, such as insomnia, anxiety, depression, memory loss, frequent mistakes in work and life.

Step 4. Correcting wrong thinking and behaviors by health education. In this step, the researcher became the leader, correcting the patient's own misconceptions by educating the patient about thyroid cancer, thus influencing the body and behavior to improve for the better. If possible, it was necessary for the patient to repeat the correct scientific knowledge and concepts, so that the patient could receive the relevant information more deeply.

Step 5. Self-practice and consolidating related knowledge. The researcher took the role of an assistant, helping patients to reiterate their biggest troubles at present, and letting them use scientific knowledge to think, then self-implying that their body and behavior would improve after thoughts change. Ask the patients to repeat the above process once or twice. If related problems occur again in the future, this process should be remembered and used again.