At present, the main treatments for depression include drug therapy, psychotherapy, and physiotherapy. At present, drug therapy is the main clinical treatment for depression, but the treatment may be interrupted due to adverse drug reactions, which may lead to poor treatment compliance and self-reduction or withdrawal of drugs. As an adjuvant therapy, the curative effect of psychotherapy is closely related to the individual's cognitive degree, understanding and mental state, and the result of its curative effect is uncertain. As a new type of physiotherapy, transcranial direct current stimulation has attracted more and more attention in psychiatric clinic because of its safety, simple economic operation, and few side effects. In the following, the application and prospect of transcranial magnetic stimulation and transcranial direct current stimulation in the treatment of depression are described in detail from the aspects of the therapeutic principle, mechanism, operation methods and matters needing attention of transcranial magnetic stimulation and transcranial direct current stimulation.