Application of SSP Scene Simulation Teaching in Diagnostics Teaching
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Abstract. Through SSP (student as Standardized patient, SSP) training for junior clinical medical students, and applied to the study and assessment of Diagnostics Teaching for senior clinical medical students, The conclusion shows that SSP scene simulation teaching could improve the scores of the theory examination of medical Subject, the satisfaction of students also increased significantly.

Introduction
The most basic requirement of global medical education emphasizes the omni-directional training of medical students [1]. "early clinic" is the mainstream mode of clinical medical education reform in the 21st century. Early contact with clinic is very important for the cultivation of clinical thinking and the study of basic knowledge of clinical medical students [2]. According to the requirements of the five-year clinical medicine training program, Binzhou Medical College aims to cultivate "applied talents". In order to better cultivate medical students' ability of doctor-patient communication, clinical thinking and teamwork, Binzhou Medical College has carried out the research of SSP scene simulation teaching guided by "early clinic".

SSP Scene Simulation Teaching Process and Its Application
SSP recruitment and training: clinical medical students from freshmen and sophomores are recruited by the student association to sign up voluntarily as SSP, students, and about 30 clinical skills students are trained and applied to senior clinical skills teaching every year. The training time is usually in the mornings of each weekend of the first semester, requiring 8 classes, a total of 32 hours, including SSP introduction and consultation. The clinical manifestations and characteristics of common diseases in clinical system (pneumonia, asthma, hypertension, coronary heart disease, diabetes, hyperthyroidism, peptic ulcer, cholecystitis, appendicitis, iron deficiency anemia, urinary tract infection) entered the learning stage of clinical knowledge and skills in advance in the freshman stage, synchronized with the basic medical courses in this period, SSP learning enthusiasm was high.

Design of scene simulation clinical environment elements: sort out the typical real cases experienced by clinical front-line teachers in clinical work, including time, place, character characteristics, simulated patients' words, behavioral characteristics, psychological characteristics, facial expressions, focusing on patients' symptoms and typical signs, writing SSP training handouts and plays, Make full use of the simulated hospital environment of the clinical training center and a variety of medical simulation teaching aids and video recordings to carry out comprehensive design. For example, in the simulated outpatient clinic of the clinical training center, SSP acts as the symptoms of asthma patients with wheezing and dyspnea. When students see his clinical manifestations, they can listen to the nearby electronic simulator of heart and lung auscultation at any time, corresponding to the typical wheezing sound. Soon developed a strong interest in the disease of asthma.

The Application of SSP in Scene Simulation Teaching of Diagnostics
The SSP enrolled after the training mainly participates in the diagnostics teaching of the junior year,
that is, in the second semester of each year, the freshman and sophomore SSP participate in the scene simulation teaching of diagnostics. The main contents are as follows:

History taking: SSP is used to conduct “history taking” according to the script in the simulated clinic and simulated ward, and various typical clinical scenarios are simulated during the history taking process. Before class, the teacher will gather all SSP, in advance to give guidance according to the proficiency of the script, whether the acting signs are in place, and whether they have a certain adaptability. In class, the teacher first allows all students and SSP to participate in consultation and make a demonstration with the teacher's standardized patient identity. Then, a group of about five or six junior medical students were distributed in a simulated consultation room to consult a SSP together. During the consultation, SSP should act as a patient, perform symptoms, and the teacher observed the consultation, but did not express his opinion. After the history taking was completed, the SSP evaluated the history taking situation of this group of students, put forward the missing items, or suggested questions and other wrong history taking methods, and finally the instructor added. The whole process runs through the humanistic education for medical students.

Physical examination: after consultation in the scene simulation, the patient is examined with SSP, during which SSP can deeply understand the feeling of being a patient and inspire them to think of others. Why should the doctor's hands be warm and gentle? Can you evaluate whether the seniors’ technique is correct and whether the strength is appropriate? At the same time, it has cultivated the concept of love and injury of SSP and junior medical students, and enhanced the enthusiasm of peers to learn from each other, but some positive signs of cardiopulmonary auscultation, which cannot be played by SSP, can be carried out with the help of electronic simulators of cardiopulmonary auscultation and abdominal palpation. SSP acts as symptoms, and positive signs of cardiopulmonary auscultation are displayed by electronic dummies, which inspire students to think about the positive signs of various typical diseases and strengthen the practicality of theoretical knowledge. It improves the students' practical operation ability and clinical thinking ability.

Laboratory examination: in order to simulate the real situation in the scene, inspire students to think about the principles of various auxiliary examinations and laboratory examination selection, and according to the typical auxiliary examination results, guide students to think deeply about the clinical significance of positive examination results. combined with basic medical knowledge and clinical symptoms and signs, we can fundamentally grasp the occurrence mechanism of the disease, pathological manifestations, as well as the development and evolution of the disease, and cultivate students’ clinical thinking. And deepen the overall understanding of the disease.

Skill operation: for the operation of basic clinical puncture skills, setting the situation where puncture is needed, SSP acts as the patient's special symptoms, combined with simulated puncture simulator, students use SSP for consultation and physical examination to obtain clinical process and examination process training, and then perform puncture operation on simulated puncture simulation human, during which a variety of clinical scenarios are simulated. If SSP has dizziness, sweating or dyspnea during pleural puncture, which inspires students to think positively that there may be pleural reaction or pneumothorax, how to deal with this emergency? Improve the clinical operation ability of medical students, at the same time, improve the post competence of emergency response.

Evaluation of Teaching Effect

The examination results of key medical subjects: compared with all the students majoring in clinical medicine of Grade 2014, the examination scores of 29 SSP students majoring in five medical courses were compared with those of the students in the natural class, using Prism8. 0 data processing software to analyze the examination results of the two groups.

Questionnaire analysis: a random return survey was conducted among 29 SSP trained for 14 and 15 years, and a questionnaire survey was conducted for 20 questions.
Analysis and Questionnaire of Medical Subject Scores of SSP in SSP Scene Simulation Teaching

Analysis of the Results of the Theory Examination

The average scores of systematic anatomy, physiology, pathology, pathophysiology and diagnostics of 29 students in the SSP group were significantly higher than those in the control group ($P \leq 0.05$). There were 29 students in the SSP group and all the students who took part in the examination of clinical medicine in grade 2014 were taken as the control group.

Results of SSP Questionnaire

A questionnaire survey was conducted among 29 SSP to answer the following 20 questions (%). More than 97% of the SSP believe that the SSP training process helps to improve the enthusiasm of various medical courses. Through SSP training, they can understand common clinical diseases, help to master basic clinical skills, and contribute to the study of diagnostics in the third stage. 79% of the students believe that SSP training improves their ability to think actively and helps to increase their confidence in contact with patients. More than 97% of the SSP improved their familiarity with the contents of consultation, better mastered the methods and skills of consultation, and more than 79% of SSP believed that by serving the scene simulation teaching of diagnostics in senior grades, it improved the ability of clinical thinking and empathy, more importantly, improved their proficiency in physical examination, cultivated the concept of love and injury, and realized the importance of teamwork in scene simulation teaching.

After many contacts with clinical teachers, I realize the responsibility and dedication of doctors, which is helpful to cultivate the habit of autonomous learning and lifelong learning.

Discussion: SSP Training and Scene Simulation Teaching Have Realized the Win-win Situation of Clinical Medicine Teaching

Medical simulation education provides a realistic and risk-free clinical environment for medical students, and provides necessary conditions for medical students to come into contact with clinic in the early stage of school [4]. Some university studies have shown that the application of SSP in diagnostics teaching can obviously alleviate the contradiction of insufficient teaching resources, and at the same time improve the teaching quality of diagnostics [5]. Training and using SSP, and scene simulation teaching in teaching can improve their own post competence as medical students, and help to cultivate the habit of autonomous learning and life-long learning. However, SSP scene simulation teaching is in the initial stage, large-scale implementation of SSP scene simulation teaching, to achieve each student can "early clinical", need further in-depth discussion and research.

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References


