

# The Application of Student Standardized Patients in Cultivating the Humanities Quality of Medical Students-Taking the Teaching of Foundation of Clinical Skills as an Example

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## Abstract

**Objective:** To explore the application effect of Student Standardized Patients (SSP) in Teaching of Foundation of Clinical Skills. **Methods:** Our school's 2017 clinical major (six-year program) students were selected as the control group, and the 2018 clinical medicine major (six-year program) students were selected as the experimental group. The control group used traditional teaching methods, with students practicing consultation in the ward. The observation group used student standardized patient (SSP) combined with humanistic care teaching methods, with SSP and students conducting consultation training. The exam scores and final theoretical exam scores, as well as medical history collection data from both groups, were compared in the context of the teaching of the Foundations of Clinical Skills. At the same time, to understand the satisfaction of 2018 grade students with SSP teaching, as well as their evaluation of the teaching model, medical history collection, and mastery of humanistic literacy through questionnaires. **Results:** The medical history collection and final theoretical exam scores of the experimental group were higher than those of the control group, and the difference was statistically significant ( $P<0.05$ ); The survey results show that students generally have high satisfaction with SSP consultation teaching. Most students believe that using SSP practice is helpful in improving consultation skills, and that using SSP consultation teaching is beneficial for cultivating their humanistic qualities. **Conclusion:** This study found that scientific training of SSP, combined with scenario simulation and its application in Teaching of Foundation of Clinical Skills, can effectively improve students' practical skills and theoretical grades in medical history collection. Additionally, it plays a role in fostering students' medical humanities qualities.

**Keywords:** students standardized patients (SSP), humanistic quality, consultation teaching, foundation of clinical skills

## 1. Introduction

Standardized patients (standardized patients, SP) refer to healthy people or patients who can stably and realistically copy real clinical situations after standardized and systematic training (Li, et al., 2023). Student standardized patient (students standardized patients, SSP), as a member of the standardized patient group, refers to the trained medical students acting as a simulated patient with a certain disease to assist students in clinical learning or training (Qin, et al., 2020). SP can simulate the clinical environment and patient questions, and can play three roles of patient, evaluator and teaching instructor.

The Foundation of Clinical Skills is a bridge discipline for medical students to learn the transition from basic medicine to clinical medicine professional courses. For just learn basic medicine related disciplines of clinical medicine junior (five-year) or senior (six years) students, communicate with patients, they often show confused, interrogation thinking disorder, astringent words poor, difficult to ask the right questions. This highlights that their

training in communication skills and mastery of related knowledge are limited (Gao, et al., 2019).

Medical humanistic quality refers to the basic qualities such as people-oriented, respect for patients, respect for life and benevolence shown by doctors in the process of treating patients (Sun, et al., 2022). Effective humanistic training for medical students can help them build harmonious doctor-patient relationships and maintain social stability. However, currently, most higher medical education in China only focuses on the cultivation of knowledge and skills, neglecting the cultivation of humanistic qualities. The main reasons for this are the lack of talent quality education courses in universities, outdated educational methods, imperfect humanistic environment construction, and a lack of practical opportunities (Qiao, et al., 2023; Lio, et al., 2018). The process of collecting medical history is the best way to cultivate students' communication skills and humanistic qualities. And students' humanistic qualities and abilities can be fully demonstrated during consultations. Unfortunately, due to the tense doctor-patient relationship and scarce clinical resources, students often lack opportunities to collect medical history and communicate with patients, resulting in poor teaching effectiveness; On the other hand, clinical teachers have similar knowledge and ability qualities in hospitals of the same level, but there are significant differences in humanistic qualities. When teaching, it is difficult for teachers to achieve homogenization and high requirements; Furthermore, humanistic literacy belongs to ideology, making it difficult to assess and evaluate. In the mindset of students who only score high, they are prone to falling into the trap of brushing questions, resulting in the result of "high scores, low effectiveness" (Yi, et al., 2024; Huang, et al., 2021).

Based on this situation, this study uses SSP with homogeneous cultivation, simulates real scenarios using common clinical cases as scripts, and allows students and SSP to communicate and practice physical examination. Students in the same group observe, analyze, think, discuss, identify problems, and repeat the practice. Through a series of cycles, teachers analyze and summarize, and teach students the following skills: when communicating with patients, they should timely understand and meet the needs of patients to be understood and valued. At the same time, they should also grasp the development and changes of patients' conditions and their expectations for medical services, pay attention to the emotions and feelings of communication objects, encourage patients to express their psychological feelings, understand patients' satisfaction with medical services and disease treatment effects, and thus build a harmonious doctor-patient relationship and improve communication skills.

### *1.1 Purpose of the Study*

This study selected SP from the standardized training of resident physicians in our hospital, and provided humanistic education to medical students through scenario simulation in the teaching case of "Clinical Skills Fundamentals" inquiry. Using exam scores and questionnaire survey results as observation indicators, this study explores the role of SSP in improving medical history collection among six-year clinical medicine students in our university, as well as its effect on cultivating humanistic qualities.

## **2. Methodology**

### *2.1 Study Subjects*

Students of 2017 clinical medicine (six year) were selected as the control group, and students of 2018 clinical medicine (six year) were selected as the experimental group. There was no statistical difference in age, gender or admission scores of the two groups, so they were comparable. Exclusion criteria: Students retaking the Foundation of Clinical Skills course.

### *2.2 Study Protocol*

#### *2.2.1 Preparation Before Teaching*

The teaching work is the attending physician or above teacher of the diagnostics section with many years of teaching experience in our hospital. The teaching contents are: medical history collection of common symptoms, physical examination and medical record writing. The case script for medical history collection was compiled by the SP trainers. The four symptoms of "fever", "chest pain", "abdominal pain" and "edema" were selected, and the scenario simulation was set to examine the students' humanistic care skills in the process of medical history collection. SP were selected from second-year or third-year resident trainees who had licensed practitioner certification. Then the SSP passed the assessment, and joined the research team. The teaching place is the clinical skills training center of our hospital.

#### *2.2.2 Teaching Methods*

Control group: using the traditional teaching method, the students practice the consultation in the ward.

Observation group: using student standardized patient (SSP) combined with humanistic care teaching method, SSP trained with students.

### 2.3 Study Indicators

#### 2.3.1 Assessment Results

Test results of the medical history and the final theory test. The assessment of medical history collection selected four cases of "fever", "chest pain", "abdominal pain", "abdominal pain" and "edema" that had been trained in consultation skills, and one of the students drew lots as the examination content. The medical history was collected for 10 minutes, and a unified scoring standard was adopted, which contained 20 points of humanistic quality assessment points, and the full score was 100 points. The questions of the final theory examination include single choice, noun explanation, question and case analysis, and the full score is 100 points.

#### 2.3.2 Questionnaire Survey

The questionnaire was designed to understand the teaching satisfaction of 2018 students with SSP, as well as the evaluation of the teaching mode, the collection of medical history, and the mastery of humanistic quality.

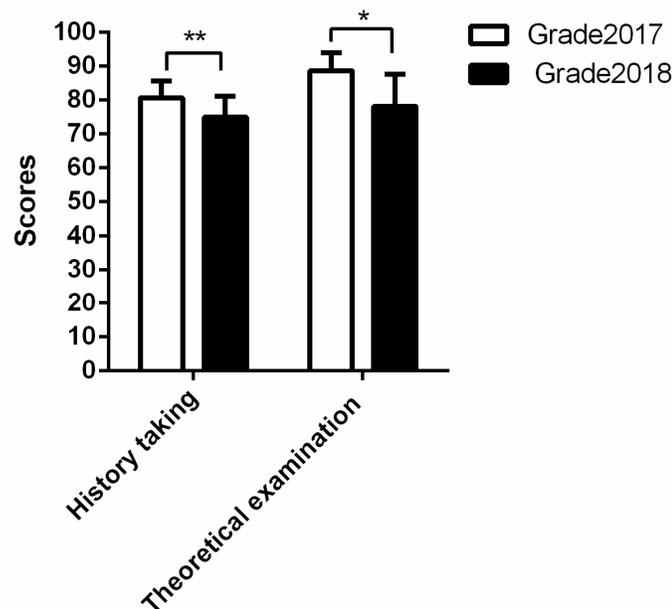
### 2.4 Statistical Methods

Data were entered through the Excel form. Statistical analysis was made on the assessment results and the questionnaire summary results of the two research groups. SPSS 20.0 statistical software was selected for statistical analysis, measurement data were expressed as ( $\bar{X} \pm s$ ) using t-test and  $P < 0.05$ . The results of the questionnaire are count data, expressed as frequency (percentage).

## 3. Results

### 3.1 Test Results

There were 53 students in the control group and 57 observers. According to the statistical analysis, the results of the medical history collection and the final theory examination in the experimental group were higher than those of the control group, and the difference was statistically significant ( $P < 0.05$ ). The results are presented in Table 1 and Figure 1.



**Figure 1.** Comparison of Medical History Collection and Theoretical Achievements of Basic Clinical Skills of the Two Research Groups

\*,  $P < 0.05$ , \*\*,  $P < 0.00$ .

**Table 1.** Comparison of Medical History Collection and Theoretical Scores of the Two Study Groups in Basic Clinical Skills

Research Indicators	Medical History Collection Results ( $\bar{X}\pm s$ )	Theoretical Examination Results ( $\bar{X}\pm s$ )	Example Number (n)
Control Group (Grade 2017)	80.62±5.06	74.92±6.26	53
Observation Group (Grade 2018)	88.65±5.23	78.19±9.38	57
<i>t</i>	8.18	2.13	/
<i>P</i>	0.000**	0.018**	/

### 3.2 Questionnaire Survey

After giving the electronic questionnaire to the students in the observation group, 51 people completed the questionnaire, with a response rate of 96.22% (51/53). According to the results, students were generally highly satisfied with SSP consultation teaching. Most students felt that SSP practice significantly improved their consultation skills, and that it helped cultivate their humanistic quality. The results of the questionnaire survey are presented in Table 2.

**Table 2.** Satisfaction Questionnaire Results for Teaching Using the SSP Consultation Teaching Model

Order number	Questionnaire Topic	Option (Number / Proportion)	Option (Number / Proportion)	Option (Number / Proportion)
1	SSP plays patient authenticity	Beyond compare (41/80%)	Good (10/20%)	General (0)
2	SSP can accurately simulate the characteristics of the patient in the case	Strongly endorse (42/82%)	Agree (9/18%)	General (0)
3	SSP can skillfully respond to medical history and information with appropriate pronunciation and intonation	Strongly endorse (47/92%)	Agree (3/6%)	General (1/2%)
4	SSP simulation was consistent and coordinated	Strongly endorse (47/92%)	Agree (4/8%)	General (0)
5	SSP can accurately express the patient's psychological condition through language	Strongly endorse (40/78%)	Agree (8/16%)	General (3/6%)
6	SSP can accurately express the patient's psychological condition non-verbally	Strongly endorse (41/80%)	Agree (8/16%)	General (2/4%)
7	SSP uses no medical terms during communication	Strongly endorse (47/92%)	Agree (4/8%)	General (0)
8	SSP did not use induced language to prompt the students during communication	Strongly endorse (48/94%)	Agree (3/6%)	General (0)
9	SSP consultation teaching is conducive to cultivating students' humanistic quality	Strongly endorse (41/80%)	Agree (8/16%)	General (3/6%)
10	How helpful is practice with SSP in improving consultation skills?	Very large (42/82%)	More (8/16%)	General (1/2%)
11	Are you more confident in collecting clinical patients after consulting with SSP?	Yes (47/92%)	Same as (4/8%)	No difference (0)
12	Which type of SSP do you think is more helpful for consultation practice?	With a medical background (32/63%)	Without a medical background (15 / 29%)	Both (4/8%)

## 4. Discussion

### 4.1 Current Situation and Dilemma of Domestic Medical Humanistic Quality Cultivation

Doctor-patient communication is the basis of diagnosis and treatment, and it is an important way for both doctors and patients to obtain information. Effective and smooth doctor-patient communication can improve patient satisfaction and even lead to better treatment results (Liu, et al., 2021). However, several factors contribute to the tension in doctor-patient relationships, with the lack of humanistic care—stemming from the neglect of medical humanistic spirit and communication education—being a key factor (Liang, et al., 2013). The harmonious doctor-patient relationship is based on the excellent humanistic spirit and medical quality of medical staff (Wang, et al., 2024). The cultivation of medical humanistic quality is very important in the teaching process of medical students, which also plays a key role in the career development of medical students (Sun, et al., 2022).

Currently, the medical humanistic quality curriculum in China lacks a scientific and systematic approach. Traditional teaching methods, such as lectures and discussions, are still predominantly used, and interactive methods that incorporate specific medical cases or real-life situations are rarely applied. This limitation in teaching methods makes it challenging to engage students effectively and foster a humanistic perspective in medical education (Han, et al., 2023).

### 4.2 Application and Value of Students' Standardized Patients (SSP) in Medical Humanistic Literacy

Medical humanistic quality education has become an increasingly important focus in medical activities. Combining humanistic care with SP teaching methods can promote a "people-oriented" approach to medical education, especially in the clinical training of medical students (Lin, et al., 2018). In recent years, SSP participation in situational teaching has been increasingly valued in domestic medical colleges (Xu, et al., 2022). However, the role of SSP in cultivating the humanistic quality of medical students is still lacking. This study utilized carefully designed scenarios and the SSP method to simulate real clinical consultations. By combining the requirements for cultivating medical humanistic quality with this simulation approach, the project successfully integrated SP consultation teaching into the curriculum. This integration proved to be an effective way to nurture medical students with a strong foundation in both medical skills and humanistic qualities.

The results of this study found that by setting the scenario simulation in the teaching case of Basic Clinical Skills, the humanistic quality education of medical students can effectively improve the medical history collection and theoretical performance of Basic Clinical Skills. At the same time, it can be seen from the questionnaire survey results that students are generally highly satisfied with SSP consultation teaching, and most students think that using SSP practice is more helpful to improve their consultation skills.

While most medical schools in China only pay attention to the cultivation of knowledge and clinical skills, humanistic quality education often takes a back seat. The integration of practical experience is vital for developing communication abilities and humanistic qualities (Qin, et al., 2020). Unfortunately, the vast majority of students lack clinical practice opportunities due to doctor-patient tension. Medical history collection requires continuous practice, and the process of practice is the best way to develop communication skills and humanistic quality. In this study, students can communicate with SSP. Students in the same group can observe, analyze, think, discuss, find problems, and repeat the practice. After a series of cycles, the teacher will analyze and guide the students again. When communicating with patients, it is crucial to use plain language to inform the disease situation, prognosis, the choice of therapy and the consequences of therapy in detail. It is necessary to comprehensively consider the various conditions of patients (physiological, psychological and social factors), and build doctor-patient trust and doctors' empathy in the process of medical history collection. According to the survey, students believe that SSP consultation teaching is conducive to cultivating their own humanistic quality. At the same time, by acting as an SSP, students gain a deeper understanding of the humanistic aspects of patient care, further enhancing their teaching and learning experience (Hou, et al., 2020; Sheng, et al., 2023).

## 5. Conclusion, Limitations and Suggestions

The application of SP training and assessment offers advantages in terms of standardization, objectivity, and reproducibility. Moreover, SP-based training can significantly reduce training time and costs for medical students. From the results of this study, the vast majority of students believe that using SSP for consultation practice can increase learning enjoyment. When conducting consultation exercises, it can effectively avoid the tension and unclear thinking caused by contact with patients in front of the bed, which can lead to confusion during consultations. The experimental results also showed that compared with traditional methods, students using SSP for consultation

can improve their exam scores in medical history collection (Zhang, 2023; Chen, et al., 2023).

However, this study also has several limitations: (1) SSP has not received professional performance training, resulting in relatively rigid performance effects; (2) SSP needs to perform according to pre-set scripts, lacking room for improvisation; (3) Although the current participation method of SSP can ensure the standardization of situational teaching process and the professionalism of medical ethics law courses, it cannot meet the needs of authenticity; (4) SSP has a medical background and it is difficult to ensure neutrality when conducting consultation exercises. We need to improve these issues in future research.

In conclusion, this study found that scientifically training SSP, combined with scenario simulation and applying it to clinical skills, can effectively improve students' practical skills and medical history collection; meanwhile, it can also improve students' doctor-patient communication ability and medical humanistic quality. SSP-based consultation training is both feasible and effective and could be expanded to other medical institutions for broader application.

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No additional data are available.

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