A Comparative Study of the Effects of Outpatient Experiential Communication and GLTC Communication on Outpatient Physicians' Emotional States and Communication Details: Postprint

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Abstract

Background: Outpatient physicians are the primary providers of medical diagnosis and treatment services in hospitals, and their positive emotional states and effective doctor-patient communication methods serve as guarantees for high-quality medical services. Objective: To compare physicians' emotional states and completion of communication details between experiential communication and GLTC communication among outpatient physicians, thereby providing references for improving physicians' communication skills and emotional states. Methods: From July 2021 to January 2022, 24 outpatient physicians from 6 departments across 4 randomly selected tertiary general hospitals in Nanjing, Jiangsu Province were enrolled as study subjects, and outpatient doctor-patient communication scenarios that met patient inclusion criteria were selected as observation settings for assessing communication detail completion. All included outpatient physicians from the same cohort first implemented personal experiential communication protocols (designated as the experiential communication group), then received training on the outpatient GLTC doctor-patient communication protocol, and one week later implemented the outpatient GLTC communication protocol (designated as the GLTC group). The Brief Profile of Mood States (BPOMS) dimension scores before and after communication, as well as completion rates of key communication details, were compared between the two groups. Results: In the experiential communication group, physicians' post-communication fatigue dimension scores on the BPOMS were significantly higher than their pre-communication scores ($P<0.05$). Post-communication fatigue and confusion dimension scores on the BPOMS in the GLTC group were significantly lower than those in the experiential communication group ($P<0.05$). The GLTC group demonstrated significantly higher completion rates

than the experiential communication group for the following communication detail items: amiable gaze (reception), polite language (reception), smiling (reception), not interrupting patients arbitrarily, nodding responsively at appropriate times, providing reassurance, explaining necessity, patience (laboratory examination), soliciting patient opinions, patience (diagnosis and communication), plain-language explanation, verbal comfort, friendly attitude, standing up (conclusion and instructions), amiable gaze (conclusion and instructions), polite language (conclusion and instructions), and smiling (conclusion and instructions) ($P<0.05$). Conclusion: Compared with outpatient experiential communication, outpatient GLTC communication better improves physicians' emotional states, alleviates physician fatigue, and simultaneously enhances the completion rates of corresponding communication details, although room for improvement remains in the completion rates of some communication details.

Full Text

A Comparative Study on the Influence of Outpatient Experience Communication and GLTC Communication on Doctors' Emotional State and Communication Details

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Abstract

Background: Outpatient physicians serve as the primary providers of medical services, and their positive emotional states coupled with effective doctor-patient communication are essential guarantees for high-quality healthcare. **Objective:** To compare doctors' emotional states and completion rates of communication details between experiential communication and GLTC (Goodwill, Listening, Talking, Cooperation) communication in outpatient settings, providing reference for improving physicians' communication skills and emotional states. **Methods:** From July 2021 to January 2022, 24 outpatient physicians from 6 departments across 4 tertiary general hospitals in Nanjing, Jiangsu Province

were randomly selected as study subjects. Outpatient doctor-patient communication scenarios meeting inclusion criteria were observed for communication detail completion. All participating physicians first conducted individual experiential communication (experiential group), then received training in the outpatient GLTC communication protocol, and one week later implemented GLTC communication (GLTC group). The Brief Profile of Mood States (BPOMS) scores before and after communication and completion rates of communication details were compared between groups. **Results:** In the experiential group, post-communication fatigue scores on the BPOMS were significantly higher than pre-communication scores ($P<0.05$). Post-communication fatigue and confusion dimension scores in the GLTC group were significantly lower than those in the experiential group ($P<0.05$). The GLTC group showed significantly higher completion rates for numerous communication details including kind gaze (reception), polite language (reception), smiling (reception), not interrupting patients, timely nodding responses, reassurance, explaining necessity, patience (during examinations), consulting patient opinions, patience (diagnosis and communication), plain-language explanations, verbal comfort, friendly attitude, standing up (closing), kind gaze (closing), polite language (closing), and smiling (closing) ($P<0.05$). **Conclusion:** Compared with experiential communication, GLTC communication better improves physicians' emotional states, reduces fatigue, and increases completion rates of corresponding communication details, though some details still have room for improvement.

Keywords: Ambulatory care; Doctor-patient communication; Outpatient experiential communication; GLTC doctor-patient communication program; Doctor' s emotions; Experimental research

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Introduction

Medical disputes have consistently been a major social concern. The *2021 National Medical Malpractice Liability Cases Big Data Report* [1] indicates that outpatient and emergency cases accounted for the highest number at 465 cases (24.17%). Among reasons for hospital losses, failure to fulfill duty of care and delayed treatment accounted for 42% of cases, followed by inadequate informed consent at 22%. Bai et al. [2] similarly found that among outpatient complaints leading to medical disputes, service attitude and communication issues accounted for 32.73%, with physicians primarily exhibiting inability to explain patiently and thoroughly, cold attitudes toward patients, and working with negative emotions. Overall, outpatient departments are hotspots for medical disputes, and physicians' communication approaches play a critical role. Patients' emotions during consultations are primarily influenced by communication style and their own illness conditions, while physicians' emotions are affected by feedback from patients. Thus, physicians' communication methods serve as a guarantee for their own positive emotions. Meanwhile, in high-pressure outpatient settings, senior physicians with rich clinical experience can often communicate

effectively with patients, whereas junior physicians require continuous learning and trial-and-error before mastering these skills, potentially incurring opportunity costs such as medical disputes during this process.

The GLTC doctor-patient communication model includes four core components: Goodwill, Listening, Talking, and Cooperation [3]. This model has been incorporated into the national planning textbook *Doctor-Patient Communication* and applied in clinical practice [4]. This study developed an outpatient GLTC communication protocol based on this model, focusing on junior physicians to compare the effects of experiential versus GLTC communication from the physician' s emotional perspective, with detailed analysis of communication elements to enhance outpatient communication skills, safeguard positive physician emotions, and reduce doctor-patient disputes.

Methods

1.1 Study Subjects From July 2021 to January 2022, 24 outpatient physicians from six departments across four tertiary general hospitals in Nanjing, Jiangsu Province were randomly selected. Physician inclusion criteria were: qualified for independent outpatient practice, under 40 years old, attending or associate chief physicians, no prior participation in doctor-patient communication skills training, reliance entirely on personal experience for communication, no prior learning of the GLTC model, and substantial room for communication skill improvement. Outpatient doctor-patient communication scenarios meeting patient inclusion criteria (conscious outpatients, not medication-refill patients, and capable of verbal expression) were selected as observation settings. This study was approved by the Nanjing Medical University Ethics Committee (Approval No.: 2021-590), and all participants provided informed consent.

1.2.1 Literature Review We reviewed domestic and international literature on emotional assessment scales. Scales such as the Hamilton Anxiety Scale [5], Hamilton Depression Scale [6], and Hospital Anxiety and Depression Scale [7] primarily evaluate patient anxiety and depression. More comprehensive emotional assessment tools include the Positive and Negative Affect Schedule [8] and the Brief Profile of Mood States (BPOMS) [9], with the latter' s immediacy characteristic making it more suitable for this study. The GLTC model integrates medical and humanistic elements well and demonstrates good adaptability to China' s healthcare environment compared with other major communication models [10]. Based on this foundation, we developed the outpatient GLTC communication protocol.

The GLTC protocol comprises six stages: reception, history-taking, physical examination, laboratory testing, diagnosis and communication, and closing/explanation, with specific requirements for communication details at each stage. We selected 12 frontline clinical experts (all with associate senior or higher titles and $ $20 years of outpatient experience) from four tertiary hospitals in Nanjing for consultation via questionnaire. In the first round, 12

questionnaires were distributed and 12 valid responses were recovered; in the second round, 13 questionnaires were distributed with 13 valid responses (100% recovery rate). Expert authority coefficients were: first round—academic level (q)=0.983, judgment basis (Cs)=0.883, familiarity (Ca)=0.966; second round (after revisions based on first-round feedback)—q=0.985, Cs=0.885, Ca=0.985. Inter-item correlation coefficients were all >0.7, indicating good results. Kendall' s coefficients for importance ratings of the six communication stages were 0.190 and 0.231 in the first and second rounds respectively (P<0.05), meeting requirements.

1.2.3 Experimental Protocol All participating physicians first implemented individual experiential communication (experiential group), then received training in the outpatient GLTC protocol, and one week later conducted GLTC communication (GLTC group).

Experiential Communication Phase: Before the trial, investigators informed physicians to communicate according to their personal habits in a relaxed manner, using their normal routine approaches without mentioning specific details of the upcoming intervention. Consultation duration was unrestricted. Physicians completed the BPOMS once at the start and once at the end of their outpatient shift. Investigators observed each consultation as medical students, timed each interaction, and conducted real-time evaluations using relevant scales.

GLTC Communication Phase: The outpatient GLTC protocol was developed based on the GLTC model [3], integrating humanistic elements such as goodwill and listening throughout outpatient communication. The six stages included: (1) **Reception:** Physician stands, smiles kindly at patients, assists patients to sit if needed, and offers comforting words; (2) **History-taking:** Physician introduces themselves, inquires about medical history without interruption, responds appropriately, and maintains necessary records; (3) **Physical examination:** Physician washes hands with disinfectant, warms hands if cold, performs gentle movements with verbal communication or reassurance; (4) **Laboratory testing:** Physician explains relevant examination information based on condition and answers questions patiently; (5) **Diagnosis and communication:** Physician proposes treatment plans based on diagnosis, consults patient opinions, answers questions patiently in plain language, and provides appropriate verbal comfort; (6) **Closing/explanation:** Physician reminds patients of precautions, explains important issues in detail if time permits, writes down key points when necessary, and bids farewell with polite language.

Training: After the experiential phase, investigators introduced the GLTC protocol and conducted training including detailed explanations of procedures and self-study via teaching videos, followed by simulated training with physicians to ensure mastery before clinical application.

1.3 Research Instruments (1) Brief Profile of Mood States (BPOMS): We selected the BPOMS adapted by Chi et al. [9] from Albrecht and Ewing' s 1971 Profile of Mood States [11] for Chinese contexts. The scale contains 30 items across six dimensions: Tension (T), Anger (A), Depression (D), Fatigue (F), Vigor (V), and Confusion (C), with five items per dimension. Response options range from "not at all" to "extremely" on a 0-4 scale. Dimension scores are calculated by summing raw scores, with higher scores indicating worse mood. In this study, Cronbach' s α was 0.902, indicating high reliability. Factor analysis yielded a KMO value of 0.913, Bartlett' s test $P<0.001$, and cumulative variance contribution of 60.82%, demonstrating good validity. Due to heavy outpatient workloads, physicians self-administered the BPOMS only before and after their shifts.

(2) Communication Details Evaluation Questionnaire: We used a self-designed questionnaire covering each communication stage and corresponding details, with binary options ("completed" =1, "not completed" =0) for each item and total communication time recorded. Cronbach' s α was 0.774, KMO=0.790, Bartlett' s test $P<0.001$, and cumulative variance contribution 64.21% for 19 items, indicating good reliability and validity. Third-party evaluators assessed completion of communication details for each physician-patient interaction.

1.4 Quality Control

(1) Investigators received pre-survey training to standardize procedures, criteria, and documentation methods, with regular discussions to address issues. (2) Before data collection, we contacted each hospital to identify participating physicians and conducted unified training using a training manual to facilitate later learning and application of the GLTC protocol. (3) Investigators assisted during each physician-patient communication session, including questionnaire administration and ensuring protocol fidelity through continuous observation and reminders.

1.5 Statistical Analysis Data were double-entered using EpiData 3.1 with logical error checking. SPSS 21.0 was used for statistical analysis. Normally distributed continuous data were expressed as (x-±s) and compared between groups using independent samples t-tests. Non-normally distributed data were expressed as M(P25,P75) and compared using Mann-Whitney U tests. Categorical data were expressed as percentages and compared using ^{2} tests. $P<0.05$ was considered statistically significant.

Results

2.1 Basic Information Participating physicians were from general practice, internal medicine, surgery, dermatology, and ENT departments, aged 31-40 years. Thirteen (54.2%) were attending physicians and 11 (45.8%) were associate chief physicians; 14 (58.3%) were male and 10 (41.7%) female.

Among patients, the experiential group included 339 cases (167 male [49.3%], 172 female [50.7%]); age distribution was 106 cases (31.3%) aged 18-35, 84 cases (24.8%) aged 36-50, 95 cases (28.0%) aged 51-65, and 54 cases (15.9%) over 65. The GLTC group included 464 cases (200 male [43.1%], 264 female [56.9%]); age distribution was 145 cases (31.3%) aged 18-35, 140 cases (30.2%) aged 36-50, 140 cases aged 51-65, and 39 cases over 65.

2.2 BPOMS Scores Before and After Communication In the experiential group, post-communication fatigue dimension scores were significantly higher than pre-communication scores ($P<0.05$). No significant differences were found in tension, anger, vigor, confusion, or depression dimensions ($P>0.05$). In the GLTC group, no significant differences were observed in any BPOMS dimension before versus after communication ($P>0.05$) .

2.3 Between-Group BPOMS Score Comparisons Before communication, no significant differences existed between groups in any BPOMS dimension ($P>0.05$). After communication, the GLTC group had significantly lower fatigue and confusion dimension scores than the experiential group ($P<0.05$). No significant differences were found in tension, anger, vigor, or depression dimensions ($P>0.05$) .

2.4 Communication Details Completion Rates Third-party evaluators assessed 803 physician-patient interactions (339 in experiential group, 464 in GLTC group). Mean communication time was (248.0$±178.1)*secondsintheexperientialgroupand*(230.9±$154.1 seconds in the GLTC group, with no significant difference ($t=1.451$, $P>0.05$). The GLTC group showed significantly higher completion rates for: kind gaze (reception), polite language (reception), smiling (reception), not interrupting patients, timely nodding responses, reassurance, explaining necessity, patience (during examinations), consulting patient opinions, patience (diagnosis and communication), plain-language explanations, verbal comfort, friendly attitude, standing up (closing), kind gaze (closing), polite language (closing), and smiling (closing) ($P<0.05$) .

Discussion

3.1 GLTC Communication Better Relieves Physician Fatigue Table 2 shows that physicians in the experiential group had higher post-communication fatigue scores than pre-communication scores, indicating that relying solely on personal experience without systematic communication training easily leads to burnout. Inadequate doctor-patient communication can strain relationships, and Liu et al. [12] found that physician fatigue increases with the severity of doctor-patient relationship tension. Tables 2 and 3 show that the GLTC group maintained stable emotional dimensions post-communication, while the experiential group' s fatigue scores were significantly higher post-communication. This demonstrates that GLTC communication better preserves physicians' vigor and reduces fatigue compared to experiential approaches.

The outpatient GLTC protocol fully integrates medical and humanistic elements like goodwill and listening, enabling physicians to communicate effectively within the same time constraints. Improved communication enhances patient compliance, providing positive feedback that improves physicians' emotional states—similar to Lü et al.' s [13] finding that the CICARE communication model (Connect, Introduce, Communicate, Ask, Respond, Exit) can gain patient support and improve nurses' self-efficacy. However, most junior physicians lack interpersonal communication experience [14], making structured protocols like GLTC valuable for compensating experience deficits. Thus, the outpatient GLTC protocol offers important reference value, particularly for junior physicians.

3.2 Completion Rates for Details Like Smiling Need Improvement
Table 4 shows that after GLTC training, completion rates for most communication details across the six stages improved significantly, mostly exceeding 85%. However, substantial improvement is still needed for details like standing up and smiling. Wang et al. [15] proposed that "smiling service" represents an emotional strategy widely applicable in social affairs, using positive emotions to provide benign emotional experiences that improve public satisfaction. Physicians' smiles not only increase patient satisfaction but also positively influence physicians' own emotions through patient feedback. Only when doctor-patient psychological order reaches harmony can the ideal state of a doctor-patient community be achieved [16].

Regarding the "standing up" gesture, some physicians reported insufficient time for regular implementation. However, actual communication times showed no significant difference between groups, with the experiential group averaging (248.0$\pm$178.1)$seconds versus$(230.9$\pm$\$154.2) seconds for the GLTC group. Therefore, future research should focus on flexibly promoting communication skills training [17] and improving completion rates for details like smiling and standing up based on communication needs.

Conclusion

Compared with experiential communication, outpatient GLTC communication helps physicians improve communication detail completion rates, enhance emotional states during consultations, reduce fatigue, and increase work efficiency, making it suitable for gradual promotion in outpatient practice. However, completion rates for some communication details require further improvement. Future research should address how to enhance protocol implementation and explore its relationship with improving doctor-patient relationships.

Limitations: (1) All subjects were from Nanjing, Jiangsu Province, limiting geographical generalizability. (2) The physician sample size was small and should be increased for more representative results. (3) Results may be influenced by individual physician habits and other factors.

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Note: Figure translations are in progress. See original paper for figures.