



Improving Chinese nursing undergraduates' nurse-patient clinical communication competence in English: A study based on a target situation needs analysis

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ABSTRACT

Background: The internationalization of higher education has stimulated an ever-increasing demand for English for Medical Purposes (EMP) courses for nursing undergraduates in China. EMP courses are designed to provide learner-centered language instruction to satisfy students' English communication needs in the future workplace. To date, far too little attention has been paid to developing a well-rounded and theory-guided nurse–patient communication teaching model based on target needs analysis in nurse–patient communication.

Objective: To develop an EMP teaching framework to improve Chinese nursing undergraduates' nurse–patient communicative competence in clinical settings based on target situation needs analysis.

Methods: A survey of nurses' target situation needs analysis in clinical nurse–patient communication was conducted among nurses in five teaching hospitals in China. A teaching model was developed based on the survey analysis to improve nursing undergraduates' nurse–patient communicative competence.

Results: A total of 411 nurses participated in this study. There were no significant differences in the overall satisfaction in target-situation communication and self-assessment in three-aspect communicative competence in clinical communication among nurses with different sociodemographic characteristics. Nurses with better self-assessment in the three-aspect communicative competence are more likely to satisfy their needs of nurse–patient clinical communication in target situation. Nurses self-reported the tasks and language skills commonly involved in nurse–patient clinical communication. A four-step teaching model was developed to respond to the findings of the target situation needs analysis.

Conclusion: This study provides important insights into the essential role of employing and integrating a language communicative competence framework and a target-situation analysis framework in formulating a needs-driven and tailor-made EMP teaching model. Based on the previous framework, the teaching model is adapted and characterized by systematic and interconnected teaching steps, core target-situation topics, and a complete set of task forms, providing EMP instructors with operable scaffolds to help nursing students observe, analyze, practice, and assess nurse–patient communication. The study will be of significance for EMP researchers and

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instructors simulated to conduct further research and practice in English communication in the wider medical field.

1. Introduction

English for Medical Purposes (EMP) has gained its place by meeting the specific English language needs of medical students and workers. The process of globalization and the internationalization of higher education has stimulated an ever-increasing demand for EMP courses in China to meet medical students' specific English communication needs in the future workplace.

EMP course is essential for nursing students to access health care information, provide better quality care, and enhance academic and professional abilities for self-development [1,2]. The EMP course designed for nursing students focuses on medical content (e.g., wound care and patient admission) and skills (e.g., writing a medical paper or making a medical conference presentation), facilitating their acquisition of special medical terms and discipline-specific literacy practices [3]. Despite these all-around development objectives, there has been a tendency in EMP teaching in China to pay more attention to translating medical terminology and teaching students to read and write, while neglecting students' verbal communication competence in clinical settings [4].

In contrast to commonly asynchronous and non-interactive written clinical communication, verbal or spoken clinical communication is interactive and relational (Cooper et al., 2020). Nurses spend most of their time interacting with their patients in their day-to-day work [5–7]. There is no doubt that nurse–patient communicative competence plays an important role in attending to the affective state of patients as well as caring for their physical illness, and thus is an essential prerequisite for developing a healthy nurse–patient relationship. Evidently, EMP educators should integrate language tasks (e.g., informing patients of their diagnosis) and language skills (e.g., paraphrasing unintelligible medical information) into an EMP course, providing nursing students with the communicative competence they need in clinical settings [1,8]. However, previous studies have failed to conduct a well-designed and theory-guided target needs analysis to probe into the language tasks and skills nursing students need to practice in nurse–patient communication, or to develop a well-rounded and theory-guided nurse–patient communication teaching model to address the target needs.

The current study differs from previous studies in that we developed and scaffolded an EMP teaching model aimed at improving nurse–patient clinical communication competence after investigating clinical nurses' overall satisfaction with their nurse–patient communication competence and their assessment of their own English grammatical, sociolinguistic, and strategic communication competence in clinical nurse–patient settings, exploring the correlation between them, and addressing the required communicative tasks and skills in the target-situation nurse–patient communication. Accordingly, the specific objectives of this study are as follows:

1. To investigate clinical nurses' overall satisfaction with their nurse–patient communication competence, and self-assessment of their English grammatical, sociolinguistic, and strategic communication competence in clinical nurse–patient communication;
2. To explore the correlation between clinical nurses' overall satisfaction with nurse–patient communication competence and the assessment of their English grammatical, sociolinguistic, and strategic communication competence in clinical nurse–patient communication;
3. To investigate the required communicative tasks and skills in the target-situation nurse–patient communication;
4. To formulate and scaffold an EMP teaching model based on a target situation needs analysis.

2. Literature review

Many previous studies have reached a consensus on acknowledging the importance of improving nurse–patient communication competence in establishing a closer nurse–patient relationship, strengthening motivation and confidence in nursing, and providing more effective treatments in clinical settings [9,10]. However, it was found challenging to communicate skillfully with patients in clinical settings, particularly for nurses and nursing students who have English as a second language [11–14]. Therefore, researchers have been striving to find effective strategies to improve nurse–patient communication competence. For example, Huang et al. [15] conducted a needs analysis coupled with observations of authentic intercultural nurse–patient interactions to develop an improved and sustainable syllabus framework and materials for an EMP nursing course focusing on improving students' "engagement strategies" in nurse–patient communication in English. Musitia et al. [16] adapted the pre-existing theoretically informed model to develop a course on communication skills and emotional competence for nurses in Kenya to ensure its direct relevance and applicability to daily work. Miguel et al. incorporated a series of classes into the Bachelor of Nursing degree program to address needs and problems in clinical setting communication for undergraduate students from non-English speaking backgrounds. Rogan and Miguel [13] evaluated an innovation in assisting undergraduate ESL nursing students to develop their clinical communication skills using podcasts and vodcasts. Lu [17] explored nurses' English language needs to communicate with patients and whether the existing nursing EMP course can address them.

Together, these studies provide insights into further explorations and evolution on the issue, validating the usefulness of needs analysis and the feasibility of adjusting the available theoretical model in filling a gap in current EMP courses. However, previous studies failed to conduct needs analysis properly to ensure data accuracy and integrity because the process was not guided by a structured and systemic needs analysis model [15,17], and the generalizations made were based on a small number or range of participants [12,16]. Moreover, from the literature survey, we found that the establishment of the nursing course does not stand up to scrutiny in developing students' nurse–patient communication because most studies placed too much emphasis on the disciplinary

content while neglecting to resort to theoretical model of language communication; some failed to pay due attention to the nonverbal aspect of nurse–patient communication to build a systemic model [14] and some developed teaching materials in unconvincing ways, simply based on direct observations of an experienced nurse involved in intercultural nurse–patient communication [15]. Most importantly, the research to date has not been able to develop a well-structured and operable teaching model that abides by the laws of language communication to repair the mismatch between nursing students’ needs and the nursing EMP course and improve their nurse–patient clinical communication competence. Therefore, in the current study, we address this gap by integrating a theoretical framework for needs analysis with the Theoretical Framework for Communicative Competence, to develop a well-structured and practical teaching model.

Universities around the world have increasingly sought to design curricula that help develop students’ workplace and professional skills [18]. For nursing students in EFL (English as a Foreign Language) countries such as China, it is essential for them to fully understand the language they will use in the future target situation, which involves “the tasks and activities learners will be using English for” [19]. Teachers cannot expect nursing undergraduates with limited workplace experience to be fully aware of what they need to do in clinical communication. The target situation needs analysis and can act as a compass on the journey to give general direction [20]. Accordingly, to develop a needs-driven and tailor-made teaching framework, we conducted the target situation needs analysis among nurses based on Hutchinson and Waters’ Target Situation Analysis Framework (Table 1).

According to Canale and Swain [21], a communicative approach must be based on and respond to the learner’s communication needs, and these needs must be specified regarding grammatical competence, sociolinguistic competence, and strategic competence (Fig. 1). The three-component Theoretical Framework for Communicative Competence has been widely accepted in second-language teaching to develop students’ communicative competence [22]. Therefore, we designed our survey and implemented the further teaching plan based on the framework.

3. Methods

3.1. Study design

As shown in Fig. 2, we designed the questionnaire, collected data, and conducted statistical analysis on the basis of Target Situation Analysis Framework and Communicative Competence Framework. Then we set up suitable teaching model to meet the analyzed target situation needs of nurse–patient clinical communication. During the teaching process, we chose appropriate teaching materials and methods to fully practice the teaching model.

3.2. Ethical considerations

Study approval was obtained from the Committee on Research Ethics of Bengbu Medical College (approval number: [2021]288). Informed consent for the study was obtained from all participants. The study followed the ethical principles of voluntary participation, informed consent, anonymity, and confidentiality to ensure that the privacy and rights of participants were protected and respected.

3.3. Questionnaire development

The questionnaire was designed based on the Target Situation Analysis Framework and the Theoretical Framework for Communicative Competence. We drew up an item pool after extracting conducive information and inspirational ideas. Subsequently, the potential items in the “pool” were reduced and integrated. The resulting near-final version of the questionnaire was reviewed by a panel of experts consisting of nursing professionals and EMP teachers who had extensive experience to assess the content, relevance, structure, and item wording. Finally, the items selected were included in the questionnaire, which comprised four sociodemographic questions, eight attitudinal questions, and five specific open-ended questions. The questionnaire was developed in Chinese.

The socio-demographic questions included years of working (Q1), professional title (Q2), education level (Q3), and the city of working (Q4). The attitudinal questions included two broad aspects: overall satisfaction in target-situation communication (Q5), and self-assessment of three-aspect communicative competence in nurse–patient clinical communication [grammatical competence (Q6–8), self-assessment of strategic competence (Q9–11), and self-assessment of sociolinguistic competence (Q12)]. Each of the attitudinal questions consisted of a characteristic statement and five response options scored on a five-point Likert scale (“strongly disagree” = 1 ... “strongly agree” = 5). As we did not want to provide predetermined answer choices, we asked

Table 1

Target-situation analysis framework.

Target-situation analysis framework (Hutchinson & Waters, 1987)
<ul style="list-style-type: none"> • Why is the language needed? • How will the language be used? • What will the content areas be? • Who will the learners use the language with? • Where will the language be used? • When will the language be used?

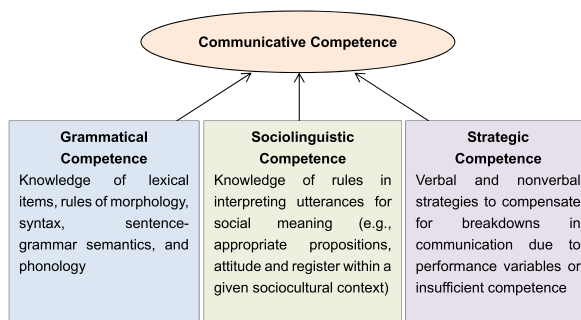


Fig. 1. Theoretical framework for communicative competence (canale & swain, 1980).

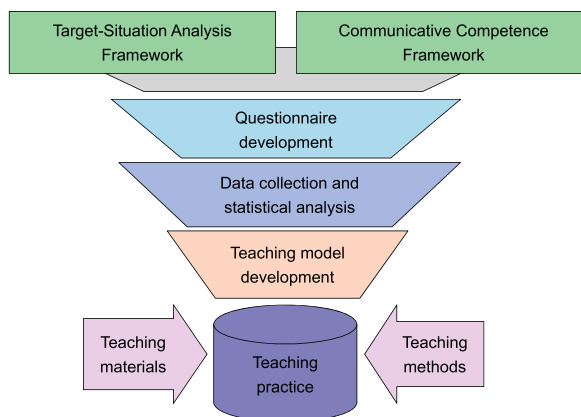


Fig. 2. Study design.

participants to respond to five specific open-ended questions (Q13–17) to provide a rich pool of genuine opinions about the tasks that need to be accomplished in the target situation and language skills they would like to learn to meet target situation needs. The five specific open-ended questions were set based on the target situation analysis framework [20].

3.4. Data collection and analysis

A questionnaire survey was conducted via random sampling among 603 nurses in five teaching hospitals affiliated to a medical college in China. The questionnaire was administered via an online survey application “Wen Juan Xing” by sending the link of the questionnaire to the nurses, and the nurses completed the questionnaire voluntarily.

The quantitative data collected online were analyzed by SPSS 25.0. Cronbach’s alpha was used to assess the reliability of the questionnaire. Regarding structural validity, the Kaiser–Meyer–Olkin (KMO) test and Bartlett’s test of sphericity were used to verify the suitability of the questionnaire. Descriptive analyses were conducted on the socio-demographic characteristic variables of the respondents. Difference analyses (independent-samples t-tests and ANOVA) were carried out to explore whether the responses differed significantly between respondents with different sociodemographic characteristics. Pearson’s correlation (two-tailed) tests were used for correlation analysis before deploying regression analysis to measure the degree of correlation between the independent variable (self-assessment of communicative competence in nurse–patient clinical communication) and the dependent variable (overall satisfaction in target-situation communication). Based on the correlation analysis results, multiple regression analyses were conducted to determine if participants’ self-assessment of three-component communicative competence in clinical communication dependently predicted their overall satisfaction in target-situation communication. For the qualitative data, three researchers first read through participants’ responses to the open-ended questions to get a thorough overview of all the collected data, and highlighted all the phrases and sentences that were potentially relevant. After repeated reading and comparison, we collated all the highlighted data into groups and generated succinct and easily understandable themes from the data following a bottom-up coding approach.

4. Results

4.1. Statistical results of the questionnaire survey

Of the 603 nurses who were sent the questionnaire link, 411 completed the questionnaire. The response rate was 68%. The value for

Cronbach's Alpha was 0.751 (greater than the minimum acceptable value of 0.70), indicating the good reliability of the questionnaire. The value of the KMO test was 0.728 (greater than the minimum acceptable value of 0.60), and Bartlett's test of sphericity was significant ($p = 0.000$), indicating the good validity of the questionnaire. The sociodemographic characteristics of the respondents are presented in [Table 2](#).

The results of the difference analysis showed that there were no statistically significant differences in the overall satisfaction in target-situation communication and self-assessment of three-component communicative competence in nurse-patient clinical communication among nurses with different years of working, professional titles, education levels, and cities where they work ($p > 0.05$).

According to the statistics of Pearson's correlation analysis, participants' self-assessment of their grammatical competence ($r = 0.220, p < 0.001$), sociolinguistic competence ($r = 0.366, p < 0.001$), and strategic competence ($r = 0.213, p < 0.001$) in nurse-patient clinical communication all had a significant positive correlation with their overall satisfaction in target-situation communication.

Multiple regression analyses were then conducted to identify predictors of overall satisfaction in target-situation communication. It was found that participants' self-assessment of grammatical competence ($\beta = 0.213, p = 0.000$), self-assessment of sociolinguistic competence ($\beta = 0.132, p = 0.014$), and self-assessment of strategic competence ($\beta = 0.291, p = 0.000$) in nurse-patient clinical communication significantly predicted their overall satisfaction in target-situation communication. In other words, nurses with better self-assessment of grammatical competence, sociolinguistic competence, and strategic competence in nurse-patient clinical communication are more likely to satisfy the needs of target-situation communication.

Finally, the highly endorsed items concerning tasks that need to be accomplished and language skills participants would like to learn in the target situation reported by participants are listed in [Table 3](#) for us to gain insight into the specific and genuine needs in realistic language situations.

4.2. Derived teaching model

We designed the four-step teaching model ([Fig. 3](#)) in light of the findings of target situation needs analysis by coordinating the five elements (why, how, what, where, when) as shown in [Table 3](#) into the design of teaching tasks and teaching materials, integrating the target situation's communicative tasks, communicative skills, communicative location, and communicative time into the progressive teaching steps of stimulation, identification, development, and feedback to improve nursing students' nurse-patient communicative competence. We describe each of the four steps in the following subsections.

4.2.1. Situation activation

As the situation learning theory of Lave and Wenger [23] states, learning is normally situated or embedded within activity, context, and culture. In line with this theory, we hold that the content and process of teaching should be reflective of real-world nurse-patient clinical communication to help students acquire the knowledge and skills required in authentic situations. Accordingly, in the first step, "Situation Activation", we presented students with preset scenarios to stimulate their relevant professional knowledge corpus and to provide them with a contextual basis for further learning activities.

We set a series of target situations parallel to the findings of the prior target situation analysis to ensure that students are exposed to settings that are close to reality. The topics and subtopics of target situations are listed in [Table 4](#).

To activate each type of target situation, we started by presenting a trigger video to place the students in an authentic context. Before watching the video, the students were reminded to get a general understanding and review the disciplinary knowledge in their minds. In this step, the focus is on presenting the students with the context.

Table 2
Socio-demographic characteristics of respondents.

Variables	Category	N	%
Years of working	<10 years	250	60.8
	10~20 years	108	26.3
	20~30 years	38	9.2
	>30 years	15	3.6
Professional title	Nurse	132	32.1
	Nurse Practitioner	177	43.1
	Nurse-in-charge	80	19.5
	Associate Professor of Nursing	9	2.2
Education level	Professor of Nursing	13	3.2
	College degree	82	20.0
	Bachelor's degree	293	71.3
	Master's degree	26	6.3
City	Doctoral degree	10	2.4
	Third-tier city	237	57.7
	Second-tier city	35	8.5
	First-tier city	139	33.8

Table 3
Nurses' self-reported communicative tasks and skills in nurse–patient clinical communication.

Open-ended Questions	Highly Endorsed Items	N
Highly Endorsed Items	Improving the quality of care	317
	Promoting mutual trust	295
	Providing emotional support	309
	Introducing medical advice, nurses, ward environment and ward system	315
	Asking about physical and psychological conditions	297
	Responding to questions and giving feedback	315
	Explaining medical concept and nursing procedure	312
	Seeking permission and cooperation	291
	Giving medical instructions and suggestions	327
	Providing emotional support for patients	306
	Offering patient health education	293
	Correct pronunciation and use of medical English vocabulary	322
	Appropriate use of grammatical rules and discourse conventions	273
	Cross-cultural communication competence (customs, religious beliefs...)	298
	Non-verbal communication competence (eye contact, facial expressions...)	300
	Face to face (ward, nurse station, operation room)	405
	Telemedicine (telephone, online)	228
	Patient admission	302
	Taking nursing history	341
	Providing nursing procedures	354
	Patient discharge	307
	Conducting follow-up visit	207

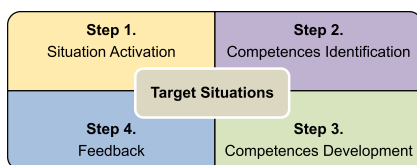


Fig. 3. Teaching model derived from target-situation needs analysis.

Table 4
Topics and subtopics of target situations (TS).

TS 1: Patient admission
TS 2: Taking nursing history
TS 3: Providing nursing procedures
1) physical examination
2) wound dressing
3) medication administration
4) pre-operative and post-operative care
TS 4: Patient discharge
TS 5: Conducting follow-up visit

4.2.2. Identification of competence

The stage of situation activation was followed by the identification of the communication competence, which appeared in the situation context. Students were asked to take notes while watching the video for a second or third time (depending on students' general comprehension ability). Students in groups of 3–4 discussed and identified the communicative stages, as well as the main content, grammatical knowledge, sociocultural values, and communication strategies of each stage to complete the task form we assigned to them beforehand (see Table 5 for sample). After that, teachers checked and commented on their forms, and summarized the contextualized use of language in the target situation.

This step of macro- and micro-analysis on content, language, and behavior is helpful to train students' active listening ability, enhance their comprehension of communicative structure, improve their ability in discourse analysis, and nurture their cultural awareness. The task forms are scaffolds for students to acquire the verbal and nonverbal communication conventions they are expected to say or act in certain clinical situations. In this step, the focus is accuracy. In this mode, the situation videos function as stimuli, paving the way for the next step.

4.2.3. Competence development

After making the students appreciate that good communication skills are identifiable, the following step is to encourage and guide them to learn these skills. In this stage, the students were required to apply the language knowledge and skills they had acquired to deal

Table 5
Task form sample for identifying competence.

Task Form for Group 6					
TS: wound dressing Patient: Mr. Anderson Location: in the ward					
Communicative process		Stage 1	Stage 2	Stage 3	Stage 4
Main content of the stage		Greeting and introduction	Ask the patient what happened and assess the pain	Explain and perform the procedure	Close the session
Grammatical knowledge	Medical vocabularies	Registered nurse	Cut, dizzy, shin, deep, hurt, painful, scale	Sterile water, stitch, heal, dressing	Pus, antibiotics, odor
	Grammatical features	The nurse used the present tense to greet and confirm. The nurse used future tense to state the purpose of nursing.	The nurse used the modal verb "can" to introduce general questions to guide patients to talk. The patient used the past tense to describe what happened.	The nurse used future tense to explain the following procedure and possible feelings or pain.	The nurse used conditional sentences to guide the patient in dealing with possible conditions.
	Sentence structures	Hello, Mr. Anderson. My name is ... I'll be looking after you today. Thank you for helping me.	Can you tell me about ... ? Oh dear. That's no good. Can you show me where the cut is? Does your leg hurt? On a scale of one to ten, how painful is it? The cut is very deep. Don't worry. We'll see to it for you.	I'll explain what we are going to do now. I'm going to ... Firstly, I'll ... You'll need ... because ... After you get ... I'll ... The last thing about your wound is ... I'll try to do it gently.	If it gets any worse please let us know. Would you like me to arrange ... ? You need to ... It's a good idea to ... Do you have any questions?
Sociolinguistic knowledge	Sociocultural context	Greet patient	Encourage the patient to talk and express feelings.	Provide medical and emotional support	Offer patient education and clarify the future care plan
	Language function	To establish initial rapport	To explore the problem, show sympathy and ease the mind	To reassure the patient, get cooperation, and develop rapport	To address concerns and provide further support
Communication strategies	Verbal strategies	Address the patient with proper tone and pitch	Use more open questions to encourage patient involvement	Speak in clear and complete sentences, avoid jargon	Speak with accuracy, moderation and sincerity
	Nonverbal strategies	Smile often with a relaxed eye contact and proximity	Smile often with a relaxed facial expression, lean forward to listen attentively, nod head to encourage, maintain proper eye contact and proximity		

with the target situation (see Table 6 for a sample case) of the same topic or subtopic but in a different scenario. The specific and close-to-reality scenario was set up by the teacher before class. In class, students in groups first analyzed the scenario from the aspect of nursing expertise, reaching a professional consensus. Subsequently, based on the given scenario setup and the task form they had completed in the previous step for reference, students were required to discuss and adjust the grammatical, sociocultural, and communicative strategies accordingly to generate a tailored template. After further enrichment, students integrated and role-played the scenario in class.

During the process, students were guided and encouraged by the teacher to model their role-play by marrying the communication process and content with language knowledge and strategies, aiming at dealing with the problem by simulating a real situation. This step is considered the core step of the teaching model, as it allows students to practice and demonstrate their communication competence including choosing appropriate vocabulary, making coherent discourse, fulfilling humanistic care, using nonverbal signals in a clinical context, and to develop their comprehensive ability of problem-solving, information-gathering, case simulation, content generation, and scenario demonstration. This step should focus on fluency of practice.

4.2.4. Feedback

In the final step, feedback was elicited from the students and the teacher to make further improvements. While one group was presenting their role-play, the other students were required to observe and take notes to assess the performance of the group. Role play feedback should be meaningful and specific to be effective in facilitating learning. Therefore, after the part of observing and note-taking, members of each group gathered to discuss and reflect on the group's performance, and then filled in the evaluation form

Table 6
Task form sample for competence development.

Item	Content
Target situation	Wound dressing
Patient	Mr. Winston Miller
Location	In the ward
Scenario	Change dressing after appendectomy. The patient feels itchy and has moderate pain (2/10 on the pain scale). There is no pus or odor.

to rate the role-play on the rating criteria (see Table 7 for sample).

The evaluation form provides a checklist mainly to allow students to review the role-players' effective application of grammatical, sociocultural, and communicative strategies on a five-point rating scale.

Additionally, teachers observed and took notes on the role-players' performance. After informing the group of their overall score and the score for each criterion, we gave comments and feedback on their strengths and shortcomings, giving suggestions for them to correct or improve phonetics, grammar, wording, syntax, sociocultural appropriateness, and nonverbal communication.

In this step, other students as well as the role-players can benefit from the process of observation and feedback, guiding them into deep reflection, mutual learning, and further improvement.

5. Discussion

The study investigated Chinese clinical nurses' overall satisfaction with their nurse-patient English communication competence and the self-assessment of their grammatical, sociolinguistic, and strategic communication competence in clinical nurse-patient communication. It inquired into the required communicative tasks and skills in the target-situation nurse-patient communication and developed a scaffolding EMP teaching model to improve nursing undergraduates' nurse-patient clinical communication competence.

Contrary to our expectations, this study did not find a significant difference in overall satisfaction with the nurse-patient English communication competence among Chinese clinical nurses with different years of working, professional titles, education levels, and cities where they work. It was also surprising that no differences were found in the self-assessment of their grammatical, sociolinguistic, and strategic communication competence in clinical nurse-patient English communication among the nurses with different years of working, professional titles, education levels, and cities where they work. The statistical non-significance, therefore, rejected the hypothesis that the overall satisfaction and self-assessment of competence in nurse-patient English communication among Chinese clinical nurses was affected by sociodemographic factors as different years of working, professional titles, education levels, and cities where they work. However, the unexpected findings accord with our other findings, which showed that only a minority of respondents believed that their nurse-patient English communication competence satisfied the target situation needs, and most of the respondents made a low self-assessment of their grammatical, sociolinguistic, and strategic communication competence in nurse-patient English communication. The findings suggest that Chinese clinical nurses generally feel less confident in their competence in nurse-patient English communication despite different sociodemographic characteristics. This aligns with the findings of the studies by Gasioreka and Van de Poel [11] and Miguel et al. [12], who found that nurses from non-English-speaking backgrounds may experience difficulties and feel less confident in nurse-patient interaction. This may be explained by the fact that English is not the mother tongue of Chinese, and it is more challenging for non-native English language speakers to achieve the required medical English proficiency, such as using and pronouncing medical terminologies correctly, organizing language in effective and appropriate ways, processing non-verbal communication, and understanding different sociocultural beliefs and expectations. This may also be related to their general lack of time and energy for professional language training due to Chinese nurses' busy working schedule and their heavy nursing workload. The situation could be further complicated and worsened because nurses are worried that the language barriers could cause misunderstanding, impact nurse-patient relationship and further reduce nursing quality. The findings also confirm the English difficulties in nurse-patient communication identified in Lu's study [17], which include vocabulary limitations, pronunciation problems, unfamiliar accents, and passive coping strategies.

Perhaps the most significant finding was that clinical nurses' self-assessment of their grammatical competence, sociolinguistic competence, and strategic competence in nurse-patient English communication was significantly and positively correlated with their overall satisfaction in target-situation communication, which means that the two variables moved in the same direction together, and thus suggests that nurses who feel more satisfied with their nurse-patient English communication competence might have a better self-assessment of their grammatical competence, sociolinguistic competence, and strategic competence. This finding is consistent with the study by Cooper and Frain [24] who found that the appropriate use of communication skills helps make clinical practitioners feel less frustrated and more satisfied in their work. This also accords with the idea of Boshier and Stocker [25] who believed it is particularly important to investigate the communicative strategies that nurses from a non-English-speaking background need to ensure intelligibility and avoid miscommunication in nurse-patient communication.

Table 7
Evaluation form sample.

Role-play Evaluation Form for group: <u>6</u> (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree)					
Description	1	2	3	4	5
1. The content of their role-play is professional and understandable.	○	○	○	●	○
2. The transitions of stages in their role-play are clear and smooth.	○	○	○	●	○
3. The role-players spoke fluently with accurate and clear pronunciation for people to follow.	○	○	○	○	●
4. The role-players tried to avoid or clarify medical jargon, thus people can easily understand.	○	○	●	○	○
5. The role-players tried to express themselves in correct and understandable grammatical forms.	○	○	○	○	●
6. The role-players communicated with an appropriate attitude and style in the given sociocultural context.	○	○	●	○	○
7. The role-players were good at using verbal strategies to get meaning across successfully.	○	○	○	●	○
8. The role-players were good at using non-verbal signals.	○	○	○	○	●
9. The role-players dealt successfully with the problem that emerged in the target situation.	○	○	○	●	○
Total Score	37				

These findings might further indicate that we need to integrate the Theoretical Framework for Communicative Competence into EMP teaching to improve students' grammatical competence, sociolinguistic competence, and strategic competence in nurse–patient English communication based on the target-situation needs. It is in agreement with the findings of Adams et al. [8] and Lu [17] who found that students need specific training on nurse–patient interactions in nursing EMP courses to base their communication activities on the genuine needs in realistic language situations to enhance students' communication competence.

In this study, clinical nurses' self-reported communicative tasks and skills in nurse–patient clinical communication were adopted to help formulate the teaching model. Furthermore, we found that EMP course is not about a patchwork of medical knowledge and English language, but rather, is about telling students how to use language when practicing medicine in clinical situations. Based on and responding to the target situation needs, specified concerning grammatical competence, sociolinguistic competence, and strategic competence, we framed our target-situation-centered four-step teaching model to underpin each aspect of students' communicative competence with progressive step-by-step target tasks. The resulting teaching framework corroborates the ideas of Savignon [26], Berns [27], Rogan and Miguel [13], Frain and Abdalla [24], and Chan [28] who demonstrated that appropriate teaching of workplace communication should be implemented with the tasks, materials, and methodologies carefully designed to achieve specific learning objectives and improve certain communication skills through students' participation in communicative situations.

6. Conclusion

We aimed to formulate an EMP teaching framework to improve Chinese nursing undergraduates' nurse–patient communicative competence in clinical settings under the guidance of the findings of the target-situation needs analysis. The study has shown that there were no significant differences in either the overall satisfaction with target-situation communication or the self-assessment of three-component nurse–patient clinical communication competence among clinical nurses with different sociodemographic characteristics, but it can be inferred that clinical nurses are typically less optimistic about their clinical communication competence. The second major finding was that clinical nurses' self-assessment of three-component nurse–patient clinical communication competence is significantly and positively correlated with their overall satisfaction in target-situation communication, indicating that nurses who feel more satisfied with their clinical competence have a better self-assessment of their grammatical competence, sociolinguistic competence, and strategic competence. Finally, with the communication tasks and skills reported by the respondents, we framed and scaffolded an operable four-step teaching model accordingly to improve nurse–patient communication competence.

The strength of this study includes the theory-guided and down-to-earth target-situation needs analysis of nurse–patient communication. These findings in the study provide a deep understanding of the overall satisfaction, self-assessment and specific needs in nurse–patient English communication competence in China, and provide important insights into the essential role of employing language communication theory in formulating an EMP teaching model. The strength also lies in the development of an EMP teaching model with systematic and interconnected teaching steps, providing students with scaffolds to observe, analyze, practice, and assess nurse–patient communication in different clinical situations.

The findings of this study have several implications and recommendations for the future practice of EMP instructors. Classroom activities must be designed based on communicative functions to make students fully aware of the development of various aspects of communication competence during their engagement. Native materials should be incorporated into communication activities for students to exploit and comprehend grammatical features, sociolinguistic conventions and communication strategies in a meaningful, authentic context. To ensure the feasibility and effectiveness of situation-centered, task-based communicative teaching, teachers should be all-rounders as designers, organizers, activators, observers, assessors and instructors.

The limitation of this study is that we used self-reported data in some questions of the questionnaire, and nurses may not report their thoughts accurately. Additionally, the research design did not allow for the assessment of long-term effects, which can also be considered a limitation. Further studies need to be carried out to validate the long-term effects of the teaching model. In terms of future work, it would be interesting to apply these findings more widely to medical English communication in new contexts, extending and adapting them to more target situations, such as nurse–physician communication or doctor–patient communication in different workplace situations.

With target situation needs analysis as the compass and the four-step communicative teaching model as the vehicle, students will finally reach the destination, integrating into the professional community with competent nurse–patient clinical communication.

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Data availability statement

The data that has been used is confidential.

CRedit authorship contribution statement

Jiajia Liu: Conceived and designed the experiments, Performed the experiments, Analyzed and interpreted the data, Wrote the paper. **Jigang Cai:** Conceived and designed the experiments, Analyzed and interpreted the data. **Shufa Guo:** Performed the experiments, Analyzed and interpreted the data. **Xiumu Yang:** Conceived and designed the experiments, Analyzed and interpreted the data.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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