

## Linguistic Strategies in Simulated Pharmacy Education: The Role of Hedges and Intensifiers in Shared Decision-Making

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### Abstract

Hedges and intensifiers are linguistic devices employed to address individuals' face needs, specifically their desires for autonomy or social belonging. This research sought to examine the application of these strategies by pharmacy students and their influence on communication scores in an Objective Structured Clinical Examination (OSCE), with emphasis on shared decision-making and the acceptance of pharmacists' recommendations by patients and prescribers. A retrospective cohort analysis was performed on OSCE videos representing poor, average, and good communication grades. Grounded in politeness theory, summative content analysis and statistical methods were used to identify, categorize, and compare the employment of hedges and intensifiers across different grade levels.

Students generally employed more hedges than intensifiers in interactions with physicians (1253 vs 565) and patients' carers (2026 vs 369). Modal auxiliary verbs were the most frequent hedges (27.5%), while high-strength adverbs were the predominant intensifiers (47%). Students rated as strong communicators used fewer hedges when addressing carers compared to physicians (median 42 vs 29), in contrast to those with poor ratings (median 42 vs 38). Pharmacy students predominantly used hedging when offering recommendations. High-performing students, as graded by examiners, demonstrated variation in hedge usage depending on the interlocutor, whereas lower-performing students applied similar linguistic patterns regardless of whether speaking to patients or physicians. These findings offer valuable insights into the relationship between grading and linguistic choices, potentially guiding the development of innovative communication training programs rooted in applied linguistics for both students and examiners. Such programs could better equip graduates to employ linguistic strategies effectively when conveying pharmacist-led recommendations in professional settings.

**Keywords:** Pharmacy education, Objective structured clinical examination, Politeness strategies, Hedges, Intensifiers

### Introduction

Effective communication skills are essential for exchanging information among patients, their families, and healthcare professionals, particularly in managing complex healthcare scenarios. These skills help prevent medication errors and contribute to improved patient recovery and health outcomes [1–3]. The adoption of

pharmacists' recommendations by patients and physicians has similarly been associated with better health results [4–6]. Equipping pharmacy graduates with the ability to deliver recommendations or interventions diplomatically can facilitate smoother workplace transitions and foster effective communication and collaboration between pharmacists and other practitioners [7, 8].

Communication training in pharmacy education has typically emphasized structured tools and templates, such as Subjective, Objective, Assessment, and Plan or Introduction, Situation, Background, Assessment, and Recommendation [9, 10]. The integration of frameworks from applied linguistics, however, remains underexplored. Politeness theory, a key concept in

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pragmatics within applied linguistics, analyzes how language is used to sustain social relationships in diverse contexts [11]. Based on the sociological notion of “face”—the public self-image individuals seek to preserve—the theory posits that interactions inherently involve face-threatening acts that may impinge on positive (solidarity) or negative (independence) face needs [11, 12]. Positive face relates to the desire for group affiliation, while negative face involves the wish for personal autonomy. Hedges and intensifiers are two primary strategies for mitigating or amplifying threats to these face needs during potentially threatening acts.

A hedge is a linguistic element—such as a particle, word, or phrase—that moderates the strength of a statement, indicating partial or qualified commitment [11]. In simpler terms, hedges reduce assertiveness and forcefulness in communication [13]. They convey tentativeness, soften messages, express uncertainty, and help prevent conflict while preserving relational harmony [14]. Intensifiers, conversely, are modifiers that amplify the force of a word or phrase to underscore the speaker’s perspective [15]. They can boost persuasiveness and message clarity [16]. Intensification may involve substituting stronger words (e.g., “tired” to “exhausted”), adding modifiers (e.g., “extremely tired”), or using metaphorical expressions (e.g., “you have a heart of gold”) [15].

In medical education, politeness theory has been utilized to examine virtual patient-physician interactions, written feedback in assessments, and professional patient-provider exchanges [17–21]. Its application in pharmacy education, particularly in simulation-based settings, has been more limited. OSCEs serve as valuable platforms for providing formative communication feedback and preparing students for real patient encounters [22, 23]. Alsubaie and colleagues [24] demonstrated how pharmacy students applied politeness strategies, including hedges, intensifiers, questions, and offers (e.g., “Please feel free to come back anytime.”), to avoid imposing on or embarrassing patients in OSCEs. Wilby and colleagues [25] explored politeness in written OSCE assessor feedback to students. More recently, Liu and colleagues [26] applied politeness theory to analyze pre-registered pharmacists’ handling of challenging workplace conversations, recommending low-stakes simulated practice, especially in urgent situations.

Pharmacy graduates must effectively communicate advice or address misconceptions with both practitioners and patients to optimize outcomes [27]. Educators play a

vital role in preparing students for these interactions. Since competency is often assessed via high-stakes simulations like OSCEs, understanding elements that shape examiners’ views of communication proficiency—such as the use of hedges and intensifiers—is crucial. This study aimed to explore the deployment of hedges and intensifiers and their association with undergraduate pharmacy students’ communication performance in a shared decision-making OSCE station. The findings may guide curriculum development and examiner training, for instance by emphasizing face needs to enhance empathy and patient-centered care, or by using politeness theory to manage disagreements and power dynamics in shared decision-making through strategic hedging and intensification.

## Materials and Methods

### Context

This research examined student performance in a “Teamwork OSCE station” designed to assess communication abilities in shared decision-making scenarios involving physicians and patients’ carers [28]. Students had not undergone specific training for shared decision-making interactions; however, they had all completed core communication skills modules in the pharmacy curriculum, covering topics such as active listening, empathy expression, and patient-centered approaches. By this stage, students had undertaken at least 12 weeks of clinical placement, providing them with real-world exposure to interprofessional communication in hospital or community environments.

In the station, students received a clinical case involving two medication-related issues and were required to present their recommendations to a simulated physician and a patient’s carer. The physician role was portrayed by the examiner—a qualified practicing pharmacist—while the carer was played by a university staff member. The term “carer” (known as caregiver in some regions) denotes a person who offers personal care, support, and assistance to someone who is elderly, frail, or affected by illness, disability, or mental health conditions [29]. This 15-minute station emphasized the acceptance of pharmacists’ recommendations, with both simulated interlocutors directed to display initial resistance during discussions of the medication management plan. For instance, the physician might express hesitation about switching to an unfamiliar treatment, or the carer could resist starting a new medication due to concerns over side

effects. Students were tasked with addressing this resistance and developing a collaborative plan with the physician and carer. Communication performance was assessed using a Teamwork OSCE rubric by the examiner acting as the physician. All examiners received prior training on applying the rubric consistently.

#### *Study design*

A retrospective cohort study with analytical and observational elements was carried out to quantitatively examine and correlate communication grade outcomes (good, average, poor) across three student groups with their use of hedges and intensifiers, as captured in OSCE video recordings.

#### *Outcomes*

The primary outcome measured the frequency of hedges and intensifiers employed by students across the good, adequate, and poor communication grade categories. Secondary outcomes included the contextual usage of the most common hedges and intensifiers within each grade category, derived from the primary findings. Additionally, variations in language use between student-physician and student-carer interactions were analyzed.

#### *Sample selection and size*

Out of 246 final-year (fourth-year) pharmacy students who completed the teamwork OSCE station, 240 videos were deemed suitable for inclusion based on audio quality. Stratified random sampling was applied to select cohorts: videos were first grouped into poor, adequate, and good communication grades according to scores from the Monash University Teamwork OSCE rubric; random numbers were then assigned using online randomization software; and the first 10 samples from each stratum were chosen, yielding 30 videos in total. Each video included two separate interactions—one with the physician and one with the patient's carer [30].

#### *Selected participants*

The selected participants comprised 8 males and 22 females (self-identified); 16 international and 14 domestic students; and 9 mature-age entrants (with prior degrees, also called graduate-entry students) alongside 21 direct school-leaver undergraduates. The median age of the cohort was 24 years.

#### *Data collection*

OSCE video samples were first transcribed verbatim and verified for accuracy. Drawing on established classifications of hedges and intensifiers [14], the research team initially developed a codebook framework. Three team members (NC, AG, AL) then analyzed a subset of transcripts ( $n = 6$ ), including two from each grade category, to collaboratively identify instances of hedges and intensifiers, mapping them into the codebook using NVivo (QSR International, Version 1.7). Any new subtypes emerging during this review were incorporated into the codebook. This process involved three iterations until the final codebook was finalized. The researchers also conducted a team reflexivity session to discuss interpretations of hedge and intensifier use in relation to students' professional communication competence. This reflexivity approach helped minimize researcher biases and avoid misinterpretations during transcript analysis [31]. Once the codebook was complete, another subset of transcripts ( $n = 6$ ) was independently coded by the same three researchers to assess intercoder reliability. After three rounds, a kappa value of 0.82 was obtained, indicating near-perfect agreement on at least 10% of the data [32]. The remaining transcripts were then coded by NC using the finalized codebook.

#### *Data analysis*

Summative content analysis was employed to determine the overall counts and medians of hedges and intensifiers [33]. As the data did not follow a normal distribution, nonparametric Kruskal-Wallis tests were performed using SPSS Statistics for Windows, version 23.0 (SPSS Inc, Chicago, Ill., USA), to detect significant differences in hedge and intensifier usage between physician-student and carer-student interactions, as well as across communication grade categories. Descriptive statistics and comparative analyses were additionally applied to identify potential patterns and differences that statistical tests could not detect due to the limited sample size.

#### *Ethical considerations*

The study received approval from the institutional Human Research and Ethics Committee (Project no: 32749), which granted permission for retrospective access to video recordings and academic grades.

## **Results and Discussion**

Analysis of the transcripts revealed a total of 2268 hedges and 934 intensifiers (**Table 1**). Usage across the three

grade groups was relatively evenly distributed, with each group accounting for approximately one-third of the total hedges and intensifiers identified. In general, students employed hedges more frequently than intensifiers during the OSCEs (2268 vs 934) (**Table 1**). Comparisons based on entry status (graduate vs undergraduate) and enrollment type (domestic vs international) showed that domestic students used more hedges in physician interactions than in carer interactions, while graduate-entry students tended to hedge less overall than

undergraduates; however, these differences lacked statistical significance. No notable differences emerged in hedge or intensifier use among good, adequate, and poor communicators when interacting with physicians. In contrast, when engaging with carers, good communicators used fewer hedges and more intensifiers compared to their poor and adequate counterparts (**Table 2**), though this difference was also not statistically significant.

**Table 1.** Distribution of hedges and intensifiers identified across communication performance levels in 30 video-recorded interactions

Total hedges coded ( <i>n</i> = 2268)	Poor <i>n</i> (%)	Adequate <i>n</i> (%)	Good <i>n</i> (%)
Carer-student interaction ( <i>n</i> = 1015)	350 (34.5)	330 (32.5)	335 (33)
Physician-student interaction ( <i>n</i> = 1253)	387 (30.9)	462 (36.9)	404 (32.2)
<b>Total intensifiers coded (<i>n</i> = 934)</b>			
Total intensifiers coded ( <i>n</i> = 934)	Poor <i>n</i> (%)	Adequate <i>n</i> (%)	Good <i>n</i> (%)
Carer-student interaction ( <i>n</i> = 369)	131 (35.5)	98 (26.6)	140 (37.9)
Physician-student interaction ( <i>n</i> = 565)	188 (33.3)	192 (34)	185 (32.7)

**Table 2.** Median distribution of hedges and intensifiers in physician- and carer-related interactions across communication performance levels

Linguistic feature	Interaction type	Poor median (IQR) ( <i>n</i> = 10)	Adequate median (IQR) ( <i>n</i> = 10)	Good median (IQR) ( <i>n</i> = 10)	<i>p</i> value
Hedges	Student–carer encounters	38 (24.5–45.3)	34 (28.3–37.5)	29 (22.8–48.3)	0.67
	Student–physician encounters	42 (29–47.8)	43 (27–62.5)	42 (29.8–48)	1
Intensifiers	Student–carer encounters	10.5 (6–21)	9.0 (7–13.3)	12.5 (10.0–18.8)	0.39
	Student–physician encounters	17.0 (14.3–22.5)	19.5 (13–26.8)	16.5 (9.5–24.0)	0.88

### Categories of hedges

The dominant forms of hedges and intensifiers observed across every performance level are presented in **Table 3**. Modal auxiliary verbs ranked as the most frequently employed hedges (27.5%), encompassing expressions such as can (not), could (not), will (not), would (not), and should (not). Among intensifiers, adverbs of high intensity were the most prevalent (47%), including terms like actually, really, already, definitely, also, and as well. According to **Table 3**, during exchanges between students and physicians, the primary hedge type for those

receiving good and adequate communication ratings consisted of mental performative shields (for instance, “I suggest switching to clindamycin, as it is recognized as a safer option for individuals with a history of anaphylaxis to penicillins.”). In line with politeness theory analysis models, the phrase “I suggest” functions here to refrain from encroaching on the physician’s authority in prescribing, reinforced by evidence—such as highlighting the patient’s previous serious allergic response to the identical antibiotic class and offering a more appropriate substitute that enhances patient safety.

**Table 3.** Most prevalent use of intensifiers and hedges by students across all communication grade categories.

Hedges	Good		Adequate		Poor	
	Subcategory  most prevalent word	Total number	Subcategory  most prevalent word	Total number	Subcategory  most prevalent word	Total number

<b>Physician-student interaction</b>	Mental performative shields ( <i>n</i> = 101)	23	Mental performative shields ( <i>n</i> = 122)	22	Modal auxiliary verbs ( <i>n</i> = 102)	44
	“I recommend”		“I want”		“Can”	
<b>Carer-student interaction</b>	Modal auxiliary verbs ( <i>n</i> = 88)	29	Modal auxiliary verbs ( <i>n</i> = 111)	40	Modal auxiliary verbs ( <i>n</i> = 127)	56
	“can”		“can”		“can”	
	<b>Good</b>		<b>Adequate</b>		<b>Adequate</b>	
<b>Intensifiers</b>	<b>Subcategory  most prevalent word</b>	<b>Total number</b>	<b>Subcategory  most prevalent word</b>	<b>Total number</b>	<b>Subcategory  most prevalent word</b>	<b>Total number</b>
<b>Physician-student interaction</b>	High-strength adverbs ( <i>n</i> = 85)	18	High-strength adverbs ( <i>n</i> = 109)	27	High-strength adverbs ( <i>n</i> = 77)	31
	“actually”		“also”		“also”	
<b>Carer-student interaction</b>	High-strength adverbs ( <i>n</i> = 64)	17	High-strength adverbs ( <i>n</i> = 52)	11	High-strength adverbs ( <i>n</i> = 77)	12
	“as well”		“as well”		“also”	

Comparatively, across interactions with both physicians and carers, students receiving poor communication grades relied most heavily on modal auxiliary verbs (e.g., “can”) as hedges. For instance, in the statement “Because it can affect the baby’s development,” the student highlighted risks to the infant’s well-being, potentially employing “can” to lessen the imposition on the physician’s negative or independence face.

In exchanges with carers, modal auxiliary verbs represented the dominant hedge type across all performance levels, with “can” emerging as the most frequently used term in every group. An example is: “He is not experiencing any gastrointestinal bleeding currently, which can occur if we did continue him on the ibuprofen.” Here, “can” mitigates the threat to the listener’s independence face by framing the risk of stomach bleeding as a possibility rather than a definite outcome if the medication continues.

#### *Categories of intensifiers*

The adverbs “actually,” “as well,” and “also,” which carry high intensity, were the most frequently employed intensifiers among students in good, adequate, and poor communication categories. For example, in “I’ve noticed that his pain scores are actually being well controlled,” the word “actually” heightens the threat to the physician’s independence face by underscoring that the patient’s pain was adequately managed, implying no need for ongoing strong analgesics.

High-strength adverbs formed the most common intensifier subcategory overall, with “as well” predominating in interactions rated good or adequate, and “also” most prevalent in those rated poor. For instance, in “Also, I have noticed she is breastfeeding and rosuvastatin will interfere with cholesterol biosynthesis and will affect the baby’s development as well,” the inclusion of “also” and “as well” reinforces the student’s conviction that the statin could harm the infant’s growth, thereby amplifying the threat to the listener’s independence face. Likewise, in “I’m concerned about his bradycardia, and he had dizziness and lightheadedness as well. So, my recommendation is to stop that eyedrop...,” “as well” stresses that the eyedrop was linked to several adverse effects, not just one, accentuating the divergence in viewpoints between speaker and listener while asserting the speaker’s independence face and challenging that of the hearer.

Results from this research demonstrate that pharmacy students adjusted their employment of hedges and intensifiers based on whether they were addressing a carer or a physician. This pattern aligns with prior investigations showing that health profession students frequently incorporate hedging in both spoken and written exchanges [18, 19, 24]. For instance, Alsubaie and colleagues observed that students applied diverse politeness techniques in OSCEs to honor the solidarity and independence face requirements of interlocutors, thereby minimizing imposition in patient encounters

[24]. In a related vein, Lambert noted that pharmacy students deployed fewer politeness markers when alerting others to allergies compared to when proposing recommendations to physicians [34].

Despite lacking statistical significance, the study found that high-scoring students, as judged by examiners, adapted their hedging frequency according to the interlocutor (using fewer hedges with carers than with physicians), while low-scoring students maintained comparable hedging levels across both. This suggests potential examiner preferences for context-appropriate language: a more straightforward style, requiring less facework, may suit carer interactions, whereas explicit strategies to preserve negative/independence face are essential to navigate power imbalances in pharmacist-physician exchanges. Although the assessment emphasized the communication rubric rather than clinical knowledge checklists, it remains unclear whether communication style alone drove lower grades or if knowledge gaps influenced linguistic choices. Where permitted by protocols, future studies might conduct immediate post-OSCE interviews with students to determine if they possessed the requisite knowledge but struggled with articulation.

While no prior work has directly examined examiner responses to student hedging and intensification, variations in assessors' own linguistic practices in feedback underscore the need to tailor these devices to audiences. Ginsburg and colleagues [19] reported greater hedging in written feedback for underperformers and more intensifiers for high achievers. Similarly, Wilby and colleagues [25] noted assessors' use of hedges in comments for low-performing OSCE students. Practicing pharmacists also tend to hedge when consulting physicians; Lambert and colleagues [34, 35] highlighted physicians' traditional dominance in healthcare hierarchies and their reluctance to accept pharmacist input without established trust built through effective communication. Interprofessional exchanges are particularly challenging, as pharmacists often identify and correct prescribing errors, which inherently threaten physicians' professional esteem and face needs (both solidarity and independence). Polite discourse and social norms in patient-provider consultations likewise significantly boost patient outcomes and relationship quality [34, 36]. Strategic application of hedges and intensifiers can empower patients and carers to voice concerns and participate actively in decision-making [37].

Pharmacy programs typically instruct students in foundational skills like active listening, nonverbal cues, tone, eye contact, and empathy through methods such as observation and simulation [2, 10, 38]. Comparable approaches and frameworks guide professional development in practice [39]. Yet, deliberate instruction on linguistic devices remains uncommon in academic or continuing education, even though research stresses that effective hedging and intensification demand knowledge of their forms and functions, ideally delivered via focused training [40, 41]. This investigation illustrates the benefits of examining student deployment of these tools in professional dialogue and professionals' responses to them.

Most videos were coded by one researcher, supported by biweekly team discussions. To enable detailed yet feasible analysis, ten videos per grade category were selected. Though constrained by sample size, this method achieved depth consistent with similar linguistic studies [24, 25]. Conducted at a single institution, the results may have limited generalizability but offer a pioneering framework for examining professional communication in pharmacy education. Data were drawn retrospectively from authentic assessments—students were aware of recording for grading but not research—yielding unbiased real-time interactions. Detailed analysis of live assessments produced 3202 coded instances, providing a fresh perspective on connecting pharmacy student performance to linguistic theories.

Future investigations could incorporate in-depth interviews or think-aloud protocols to explore student and examiner awareness of hedges and intensifiers' effects on OSCE outcomes and real-world pharmaceutical consultations. Since examiners were primarily practicing pharmacists or preceptors—known to positively shape student communication [10]—subsequent work might probe whether preceptors view hedging as more suitable for physician interactions than carer or patient ones. Additional studies could examine how varying health literacy among patients or carers influences student linguistic choices and perceptions of interaction success. Beyond international/domestic status, sociocultural elements like first-language English proficiency or healthcare work experience were unavailable here; future efforts might explore these influences, including social media's role in politeness norms.

Though rooted in OSCEs—a core assessment method in pharmacy programs—extending this approach to

workplace or placement interactions with actual patients and professionals could prove valuable [38]. Given potential differences in educational backgrounds between examiners and real patients, translating simulation findings to practice requires further validation. Research might compare marking by nonprofessional simulated patients versus experts and assess hedging/intensifier impacts on scoring variations. This work lays groundwork for improving communication instruction, learning, and evaluation in pharmacy but would benefit from complementary studies on linguistic factors influencing uptake of pharmacist interventions in practice—critical as pharmacists expand prescribing and therapeutic roles.

### Conclusion

This research shows that pharmacy students predominantly hedge during recommendation delivery. High-rated communicators adapted hedging based on interlocutor type, unlike lower-rated ones who maintained uniform patterns across carers and physicians. These insights illuminate connections between communicative proficiency, examiner evaluations, and specific hedging/intensification strategies, potentially shaping novel linguistics-informed training initiatives for students, faculty, and assessors. With expanding pharmacist responsibilities, such initiatives could better prepare graduates to intentionally apply linguistic tools for advancing pharmacist-initiated recommendations in professional practice.

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