The expression of emotions in online medical consultations: a comprehensive Spanish-English analysis

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Abstract

Doctor-patient interpersonality strategies have evolved considerably in recent years, mainly due to the increase in telephone and online consultations generated by the Covid-19 pandemic. In such interactions, the control and expression of emotions have a crucial influence on the adequacy and effectiveness of communication. Remote interaction makes this affective exchange even more complex than in face-to-face consultations. This study aims to configure a comprehensive model for analysing the affective domain in virtual medical consultations, useful for English and Spanish patients and learners. With this aim, the most recognised theories on professional interpersonality are reviewed and applied to a corpus of doctor-patient interactions in Peninsular Spanish and British English, extracted from representative forums on the Internet. The analysis highlights how specific stance and register variation mechanisms positively and negatively influence the emotional domain in these communicative exchanges. The proposed model allows significant contrastive findings on the occurrence and intensity of sentiment markers in both languages. The results illustrate how doctors in Spanish favour a more cautious, detached and predictable encounter, while doctors in English use a greater number and variety of attitudinal strategies to achieve engagement, empathy and emotional comfort.

Keywords: doctor-patient communication, stance adaptation, register variation, interpersonal strategies, markers of emotion.

Resumen

La expresión de las emociones en las consultas médicas virtuales: un análisis integral contrastivo inglés-español

Las estrategias interpersonales en la relación médico-paciente han evolucionado considerablemente en los últimos años, en especial por el aumento de las consultas telefónicas y virtuales generadas por la pandemia del COVID-19. En tales interacciones, el control y la expresión de las emociones tienen una influencia crucial en la adecuación y eficacia de la comunicación. La interacción a distancia hace que este intercambio afectivo sea aún más complejo que en las consultas presenciales. Este estudio tiene como objetivo configurar un modelo integral para analizar el dominio afectivo en las consultas médicas virtuales, útil para pacientes y estudiantes de inglés y español. Con este objetivo, se revisan las teorías más reconocidas sobre la interpersonalidad profesional y se aplican a un corpus de consultas médico-paciente en español peninsular e inglés británico extraídas de foros representativos en Internet. El análisis destaca cómo las actitudes y los mecanismos de variación del registro influyen positiva o negativamente en la expresión efectiva de las emociones durante estos intercambios comunicativos. El modelo propuesto permite revelar contrastes significativos sobre la frecuencia y el impacto de los marcadores de la emoción en ambos idiomas. Los resultados ilustran cómo los médicos en español suscitan encuentros más cautelosos, impersonales y predecibles, mientras que los médicos en inglés utilizan un mayor número y variedad de estrategias actitudinales para destacar su grado de compromiso y empatía, y, así, facilitar el confort emocional.

Palabras clave: comunicación médico-paciente, adaptación de la actitud, variación de registro, estrategias interpersonales, marcadores emocionales.

1. Introduction

In the last 50, and especially 20 years, the complex communication between doctor and patient has been studied from multiple points of view (Ong et al., 1995; Salager-Meyer, 2014). However, as Cate and Haes (2009) warned years ago, there are still few information and training resources for university-level medical education. Experts in medical communication have noted that graduates and practitioners are increasingly concerned about their abilities to interact with patients, especially when delivering bad news online (Schmid Mast et al., 2005; Gotti & Salager-Meyer, 2006). These concerns of doctors and patients, as well as the interest of researchers in this field of study, have intensified over the last two years owing to the effects of the Covid-19 pandemic and the consequent need to carry out many professional tasks virtually with less preparation and guidance than would be desirable (Bokolo, 2021). In fact, experts such as Fernández-Luque (2015) state that, in doctor-patient practice, the link between the Internet and health was first

established only about a decade ago. The progressive growth of Internet use, especially with the expansion of smartphones, has given rise to the phenomenon of "mobile health" (mHealth), which gives people access to over 100,000 applications to gather health data and contact health professionals.

Communicative success with e-patients depends primarily on the accuracy and quality of the medical information exchanged and on the interpersonal skills of the interlocutors, especially the affective tactics used by doctors to reply to the patients' requests and questions (McNeilis, 2001). In line with this, Xin and Yansheng (2021) emphasise that medical trust today depends on doctors' ability to show that they take their patients' problems seriously and treat them with care and concern. Prototypically, the affective tactics used for these purposes align with the essential attitudes typical of this environment, aimed at alleviating the intrinsic difficulties of this interaction, which is delicate, subtle and fragile, but also honest and direct. The most distinctive forms of affect in this environment are sympathy, understanding, consideration, relief, sensitivity, compassion and reassurance (Jeffrey, 2016, Chen, 2020). Chen (2020) points out that patient satisfaction has to do with the informational and emotional support of the doctor; however, the latter has a greater effect on the patient's satisfaction.

One of the virtual communicative genres in which many of these issues converge is medical consultations in online forums. These increasingly popular information exchange platforms provide ease and flexibility, facilitating natural expression and more spontaneous communication (Mahoney, 2015; Giménez-Moreno & Martínez-Sierra, 2017). In addition, computer-mediated communication favours anonymity and accessibility for those marginalised in society (Tanis, 2008). It is also an attractive genre for health researchers since it allows information on public health to be retrieved and analysed through so-called "infodemological" studies, which, for example, have been a valuable source of data for treating diseases caused by tobacco consumption and other drug addictions (Hua et al., 2020).

As experts in sentiment analysis of medical forums declare, patients recurrently express controversial feelings such as confusion, encouragement and gratitude (Bobicev & Sokolova, 2018). The Covid pandemic has highlighted other relevant emotions in the last two years. For example, in the extensive survey conducted by Al-Zyoud et al. (2021) on medical consultations, emotions such as empathy, honesty, optimism, simplicity and

deliberation stand out. Their results confirmed that physicians' communication skills positively affected the psychological state of patients. Conversely, other recent studies (Xin & Yansheng, 2019) reveal that the current difficulties have negatively impacted the mutual trust between doctors and patients.

Although these studies cover essential emotional aspects, none offers an inclusive model of analysis that allows systematic identification of the broad spectrum of emotions and attitudes that interact in this genre. This study's first aim is to review studies on doctor-patient interaction in search of criteria about its affective nature, in order to configure a comprehensive model of attitude analysis in online medical forums.

The second objective is in line with research intended to reverse the progressive depersonalisation and the expanding socio-educational gaps detected in Spanish doctor-patient encounters, particularly since the Covid-19 pandemic (Arroyo & Diaz, 2021). This objective is also motivated by studies that attribute specific emotional and psychological problems of Spanish patients to doctors' lack of communicative training. (Haskard-Zolnierek et al., 2021). The second part of the study thus focuses on analysing the affective domain in a corpus of online consultations in Spanish and English, comparing the attitudinal mechanisms in both languages from a comprehensive contrastive perspective. This study can thus shed light on the degree of confluence and divergence of both languages and medical cultures in this online genre.

2. Salient attitude dimensions and affective mechanisms in medical interaction

A comprehensive review of the literature on medical interaction is necessary to identify those intrinsic dimensions of this professional genre that encompass the discursive regulators of emotions in conversation (Xin & Yansheng, 2021). This section synthesises the theoretical approaches and attitudinal mechanisms of the proposed analysis model, structured in five categories corresponding to the most prominent communicative dimensions in medical consultations (Table 1).

Salient attitude dimensions
1. MEDICAL GOOD PRACTICE CONVENTIONS
2. PROTOTYPE MEDICAL-STYLE MARKERS
3. PHATIC AND DESCRIPTIVE PROTOCOLS
4. EMPATHETIC BEHAVIOUR INDICATORS
5. RELATIONAL IDENTITY-SHIFT STRATEGIES

Table 1: Five salient attitude dimensions in medical consultations.

The first two dimensions, good practices and prototype style markers, focus on the doctor's profile and professional conduct and depend on the recognition given by the medical speech community (in a given sociocultural context) to a series of medical practice conventions (Kelly, 2020). For example, studies on good practices emphasise the importance of good manners, conveying interest, giving compliments and showing a non-judgemental attitude (Ong et al., 1995). They are intended to express correction, demonstrate reliability, and reinforce the doctor's professional competence and ethics, particularly when using online platforms (Guseh et al., 2009). These medical convention markers are expressed differently depending on the doctor's communicative style. Schmid Mast et al. (2005, p. 245) proposed a typology that differentiates three doctor prototypes according to the way they address their patients: (1) "disease-centred doctors", who are generally viewed by the patients as a bit "blunt and insensitive", (2) "emotion-centred doctors", viewed as "kind but sad", and (3) "patient-centred doctors", regarded as "understanding and positive". Each prototype, identified by a series of communicative markers, includes affective tactics expressing fairness, sensitivity, compassion, reassurance, and other emotions. From this attitudinal point of view, other prototypes are worth mentioning, like the difference between doctors-caretakers (more distant and institutional) and doctors-caregivers (more affectionate care providers), highlighted by Coombs et al. (1993).

The third salient dimension, phatic and descriptive protocols, is genre-oriented and depends on the speech act move structure. As experts have emphasised for over four decades, a good command of these protocols (such as salutations, acknowledgements, questioning and farewells) also accentuates the doctor's respect and professionalism (Goffman, 1981; Mapelli 2015). Politeness markers, especially in the form of pathic communication such as greetings, farewells and best wishes formula, are intended to assure a sense of respect, positive emotion and a good atmosphere; also, specific jargon, made up mainly of diseases' names,

reinforces the doctor's proficiency and patient trust (Xin & Yansheng, 2021). Effective control of description is paramount in this genre (Salager-Meyer, 1985, 2014), with salient mechanisms such as metaphors and similes (e.g., *like grit in my eye*), hedges and softeners (e.g., *a little discomfort*, *slightly sick*), and vague expressions (e.g., *a kind of ache*).

The last two dimensions, empathetic behaviour indicators and relational identity-shift mechanisms, depend on the relationship established with the patient. The first type demonstrates and measures the degree of sympathy, understanding, consideration, and relief of the interacting parties. Over the last 50 years, experts in Communication Accommodation Theory (CAT) have highlighted a large number of strategies that interlocutors often use to converge and empathise with each other and thus facilitate interaction (Giles et al., 1987). As Breen et al. (2009) highlight, the physician's primary goal is to interact with the patient, using an interpersonal combination of personal exploration, sensitivity, accommodation, rapport, and trust. The study by Ahmed and Bates (2016) with 310 patients in primary care clinics concluded that convergent medical behaviour was the most important factor for improving patient satisfaction. This behaviour is manifested by making the patient feel treated as an equal, individually and efficiently, and by showing interest and reducing their anxiety as much as possible. Success therefore depends on a series of CAT strategies that facilitate interpretability, such as asking precise questions and checking that the patient understands and assimilates what is being asked or transmitted. Linguistically, this usually includes prompting verbal offloading and reflexive dialogue, expressions of encouragement, engagement markers, paraphrasing and using silences, among many others (Ong et al., 1995; Peters, 2022).

Despite CAT's expansive scope, experts warn of a significant imbalance in using these strategies in actual practice, often due to underconvergence or overconvergence behaviours (Street, 2003, p. 146). Some doctors do not show enough strategies for successful interaction, while others use so many colloquial strategies, informal expressions and empathetic tactics that they generate misunderstandings affecting the information and relational identities, leading some doctors to be even perceived as condescending or patronising. Controlling relational identities is therefore paramount in training and professional practice.

As in all professional registers, in medical consultations, communication flows through a series of conventional relational identities (i.e., doctor-

patient) that act as a pivot or reference point on which other intentional relational identities (e.g., parent-child, teacher-student, seller-consumer) strategically emerge and intersperse (Giménez-Moreno, 2006). These professional, social and personal relational identities are often blended and interchanged in these highly affective-marked genres to influence the parties' sense of proximity, familiarity, and ease (Coombs et al., 1993; Mapelli, 2015). The relational-identity shifts are evidenced by register-marked mechanisms, such as specific jargon vs colloquialisms, specialised aphorisms vs popular idioms, sudden adaptations in prosodic choices, characteristic syntactic structures and interactive markers.

This intricate heterogeneity of distinctive features must be controlled to achieve communicative success in the affective domain in this genre, i.e., to manage listening, silence and dialogue with the attitude that best enhances empathy and respect (Bensing et al., 2011). Therefore, a comprehensive analysis model must combine various categories and criteria from different methodological approaches. In this research, four of them will be particularly emphasised: (a) Systemic-Functional Linguistics, (b) Register Variation Theory, (c) Metadiscourse Studies, and (d) Sentiment Analysis Theory.

Systemic-Functional Linguistics, and its purpose-oriented perspective on professional politeness and rhetorical choices, can help focus on the range of persuasive mechanisms speakers use to attain these objectives, including traditional evaluative and emotional mechanisms (Gotti & Salager-Mayer, 2006). Register Variation Theory and its succeeding contextual and interpersonal perspective on tenor variation and relational identities, professional prototypes and socio-cognitive conventions can contribute to identifying the affective and attitudinal patterns of this particular genre (Halliday, 1994; Giménez-Moreno, 2006; Staples et al., 2020). Additionally, Metadiscourse Theory and its characteristic textual analyses on appraisal mechanisms concerning attitudes, emotions and beliefs (Martin & White, 2005; White, 2015; Hyland, 2019) provides the framework to assess the overall affective impact and also the subjective mechanisms operating during the interaction, with the possibility of measuring these dimensions statistically. Finally, Sentiment Analysis Theory offers opinion mining tools, sentiment identification and appraisal facilities (Taboada, 2016).

Consequently, our comprehensive model for analysing the affective domain of online medical consultations must at least include the following four categories:

1. Sentiment markers, such as qualitative adjectives (Wilson et al., 2008), intensifiers (Taboada et al., 2011) and other emotion indicators of, for example, irony or sarcasm (Hernández Farias & Rosso, 2017).

2. Interpersonal strategies that reveal stance and register variation, evidenced in the lexical fluctuation and the use of certain sentence types, modality, personal markers and indirect speech, among others (Giménez-Moreno, 2006; White, 2015; Staples et al., 2020).

3. Appraisal and mitigation tactics that convey affect, judgement and appreciation; also their force and their intention (Martin & White, 2005; Bellés-Fortuño, 2018), together with mitigation mechanisms such as sequential placement and multifunction mitigators to alleviate face threats (Caffi, 1999; Goldsmith, 2000).

4. Positive and negative politeness strategies (Brown & Levinson, 1978), accompanied by a wide range of rhetorical figures led by gradations, metaphors, euphemisms, litotes and understatements (Heifferon & Brown, 2009; Bleakley, 2017).

Before concluding this section, it is essential to point out that these categories often overlap in daily communication. Several of their linguistic representations can be brought together in one expression. For example, the ironic response of a doctor to a *Thank you* for something difficult done to help a patient may be *My pleasure!*. This last expression could be considered a rhetorical figure, politeness strategy, self-mention and mitigation mechanism. Therefore, these categories need to be approached from an interrelated perspective in many instances and contexts. It is also possible - and might be advisable - that on particular occasions, they need to be studied or assessed together with other complementary categories and linguistic features not included here. These methodological issues will be explained in the following sections.

3. Corpus description and methodology

As expected, the compilation of the Spanish and English online corpora was laborious given the fact that professional medical forums: (a) require a membership fee and a monthly subscription, (b) are focused on a specific field rather than on a variety of themes, and (c) tend to omit specific and detailed information referring to other private websites for specialised or

private issues (Giménez-Moreno & Martínez-Sierra, 2017). Therefore, in the medical forum data collection, at least three criteria were followed to control variables: (1) the forums had to be freely accessible, (2) the physician responses had to provide detailed information in response to the issue raised by the patient, and (3) the forums should not be specialised only in a specific topic of medicine but in a wide range of medical issues.

Two representative forums have been selected considering the mentioned factors and difficulties: *Doctors Lounge Forum* for the English corpus and *Opinion Médica Online* for the Spanish corpus. The corpus comprises threads from these two forums compiled during the last six months of 2020. Threads directly related to Covid-19 were excluded to minimise the polarisation of language associated with this new disease to the detriment of the usual expressions related to common conditions. After a filtering and organising process, the final compilation included 100 threads about five highly recurrent medical pathologies: dermatological problems, diabetes, gynaecological issues, paediatric consultations and sexually transmitted diseases. In addition to their quantitative salience, these pathologies were selected because they tend to be more difficult to discuss due to their intrusive nature involving personal areas of affective complexity.

The English corpus of doctors' and patients' interactions contained 30.023 words (1.838 sentences) and the Spanish corpus comprised 12.741 words (856 sentences). The Spanish corpus thus contained practically half as many words as the English corpus; however, when focusing only on the doctors' interventions, the figures indicate that English doctors (13.986 words) speak less (46% of words included in the exchanges) than Spanish doctors (9.386 words, 73.6% of words in the corpus). This demonstrates a clear predominance of the Spanish doctors' voice in this doctor-centred corpus in contrast with a more patient-centred and engaging approach in the case of English doctors.

The methodological criteria used to analyse the affective domain in these corpora followed the proposed model of salient categories synthesised in the previous section: sentiment markers, interpersonal strategies, appraisal and mitigation mechanisms, and rhetorical and politeness strategies. To identify and study the features of each category we included quantitative and qualitative procedures. The qualitative analysis was based on systematic observation and manual annotations. Three corpus analysis applications were used for the quantitative analysis: *Sketch Engine* (for keywords,

frequencies, collocations and statistical comparisons) and *Lingmotif* and *Nvivo* (for sentiment analysis).

4. Results and discussion

The following pages summarise the findings of the corpora analysis. In the first stage, doctors' intervention lengths and threads' lexical density are compared in the English and Spanish corpora. Next, the main categories of affective mechanisms are identified and compared.

Regarding lexical density, as previously mentioned, the total number of doctors' interactions was higher in the Spanish corpus than in the English one. However, in terms of the length of the interventions (Table 2), the difference was insignificant, as the average number of words per interaction was 54 words for the English doctors versus 52 for the Spanish doctors. As for the shortest and longest interactions, there was a match between the corpora, with 14 the total number of words in the briefest English interaction versus 16 words in the shortest Spanish exchange. Nevertheless, the doctors' most prolonged interaction took place in the English corpus, with a slightly higher number of words, namely 397 words for the longest, followed by a 232-word one, versus 198 words for the most prolonged Spanish interaction. There seems to be a standard length in doctors' interventions irrespective of the language, namely 52-54 words per interaction (14-16 words in brief interactions and between 198-232 words in prolonged interactions).

Doctors	English corpus	Spanish corpus
NUMBER OF CONVERSATIONS	231	160
AVERAGE NUMBER OF WORDS	54	52
LONGEST INTERVENTION	397/232	198
SHORTEST INTERVENTION	14	16

Table 2: Doctors' interventions length.

4.1. Sentiment markers

The first analysis was carried out with the application *Lingmotif,* focusing mainly on the doctors' interventions. This tool detects positive, negative, and

neutral items and provides positivity and negativity scores on the data. The software identified a significant number of positive items in Spanish (e.g., *prevenir, mejorar, descanso, correcta, positiva*) and English (e.g., *helpful, useful, help, correct* and *positive*). The main drawback of *Lingmotif* is that it identifies the items associated with diseases, symptoms, and remedies as negative (e.g., *diabetes, injury, infection, blood, fever, pain*), even when their pragmatic meaning is positive (e.g., *la fiebre demuestra que su metabolismo está combatiendo la enfermedad*). This variance accounts for the high number of negative items in both corpora and supports the convenience of reinforcing the investigation with further analysis. Nevertheless, as these terms considered negative have a similar frequency in both corpora, the results clearly show that the lexical negativity in the English consultations is significantly higher than in the Spanish ones, showing a total of 784 in English versus a total of 476 in Spanish. It must be underlined that the negative score in English doubles that in Spanish (2420 versus 993). In contrast, the number of positive items is similar in both languages, namely 410 in English and 407 in Spanish.

The corpus analysis software *Nvivo* was used for the second analysis as it detects emotion in more extensive stretches of text. It provided us with 0.4% negative items in the Spanish Corpus and 2.9% in the English corpus. Thus, this second tool corroborates the higher percentage in the English corpus of negative terms. *Nvivo* analysis differentiates among negative items (1.5% in English and 0.2% in Spanish), moderate negative terms (0.9% in English and 0.1% in Spanish), and extremely negative (0.5% in English and 0.1% in Spanish). The linguistic representation of negative words includes names of diseases (e.g., *eczema, cancer, diabetes*) and nouns with a negative connotation (such as *infección, riesgo, problema, lesiones/ pain, discomfort, wounds, condition, itchiness, sores,* and *injuries*). The presence of adjectives among the negative linguistic features of the corpus is varied, including intensifiers (e.g., *frequent, excessive, recurrent, unstable, extreme, low*) and also adjectives with a negative connotation related to adverse feelings (e.g., *troubling, frustrating, worrying*) and physical discomfort or pain (e.g., *stabbing, ulcerated, inflamed, viral*).

Concerning positivity rates, the English corpus contains 1.1% positive items, whereas Spanish positive items represent 0.17%, most identified as neutral positive. Positivity is also higher in English, although the difference is small. It is reflected in the nouns used (e.g., *advantage, improvement, heal*) and particularly in the adjectives identified in both corpora (e.g., *benign, effective, painless / ideal, mínimo, mejor*).

The analysis shows a few isolated instances with positive/negative effect, like the aforesaid names of diseases and some collocations of terms with opposite emotions whose sentiment depends on their combination (e.g., the positive adjective *eficaces* was identified as negative when accompanied by *solo* or *algo*). Certain prosodic and syntactic choices also affect the positivity/negativity of some expressions, in addition to their linguistic register. In this sense, a significant finding is the use of exclamation marks by the English doctors, especially at the end of their interactions (e.g., as closing expressions and farewell formulas such as *Best wishes!*, *Good luck!*). These exclamations contrast with the more formal and conventional register of the Spanish correlates (e.g., *¡Cuídese!* or *¡Adiós!*). This greater use of positive language corresponding to the casual professional register in the English corpus correlates with the combination of certain register-marked discursive mechanisms that are illustrated in the following section.

The global results of the sentiment analyses, both in their positive and negative dimensions, show a more significant occurrence of sentiment markers and, therefore, greater emotional intensity in the English online consultations than in the Spanish ones.

4.2. Interpersonal procedures

The analysis confirms that doctors' highest priority, and predominant objective in this genre, is counselling patients. This interpersonal macro-function encompasses most interactive moves that configure this type of online encounter: advising, informing, recommending, guiding, instructing, reassuring, etc. The linguistic choices used in this procedure significantly influence how both interlocutors express their affection and emotions.

A distinctive and contrastive interpersonal mechanism in counselling is the preemptive use of modality. In the case of English, the most frequent linguistic strategy to advise is by means of the exploratory word *would* (0.55%) within a conditional sentence (e.g., *If it gets worse, I would recommend waiting to see if it gets better in a few days*). Its correlate in Spanish is the verb of obligation *deber* (0.69%), mostly in its conditional inflections (e.g., *Deberían hacerle pruebas*). A second option in the Spanish corpus is the use of impersonal coercing expressions such as *es importante* or *hay que*, which can be understood as synonyms or alternative expressions of *debería* (e.g., *Debería/Es importante/Hay que evitar*). This attitude of authority and detachment is also revealed through sentences headed by the impersonal reflexive passive form

in Spanish (e.g., *Se recomienda*, *Se aconseja*) and other impersonal phrases (e.g., *Algunas recomendaciones podrían ser*). Spanish doctors use the explicit version of *recomendar* (0.17%) a little more often than the English doctors use *recommend* (0.11%), to avoid directness, minimise their dominant role and invite patients to make their own decisions.

Another characteristic strategy when giving recommendations is the omission of the advising verb *Le recomiendo que* and the personal pronouns. Instead, they opt for imperative sentences like *Consulte a su especialista*, which reinforce the direct and distant tone that characterises the Spanish doctors compared to their correlates in English, who tend to use more empathetic options, such as *I would get a second opinion.* The use of imperatives is salient in both databases reinforcing the doctors' authority and control over the situation. Still, in English consultations, these verbal forms are regularly complemented by the auxiliary verb *do* (e.g., *Do get an opinion from your doctor*). This auxiliary verb softens the imposing effect of the imperative in a much more encouraging and reinforcing exchange. As these features and examples show, the dividing line between recommendation-command and recommendation-suggestion is sometimes very thin in this genre, marked merely by intonation and modality.

The stance concerning some particular engagement strategies, such as personal markers, contrasts in both corpora. As Table 3 and 4 illustrate, the second-person pronouns *you* (1.25%) in the English corpus far outnumber the joint frequency of *usted* (0.05%) and *tú(s)* (0.02%) in the Spanish corpus. This engagement mechanism is often used to emphasise the patients' uniqueness, explicitly addressing and involving them in the discourse; it also reinforces the personal and bidirectional relationship between doctor and patient. Again, in this mechanism, English doctors stand out in their individualising and concurring effort, compared to Spanish ones, as shown by the data in Table 3 and 4.

Personal markers	English corpus	
you	175	1.25%
your	125	0.89%
I	84	0.60%
my	13	0.09%

Table 3: Use of personal markers.

Personal markers	Spanish corpus	
usted	5	0.05%
tú (s)	2	0.02%
su (s)	2	0.02%

Table 4: Use of personal markers.

This tendency extends to other adjectives and pronouns, as is the case with second-person possessives. The English corpus shows a frequency in the use of the adjective *your* (0.89%), whereas in the Spanish corpus only two examples of *tu(s)* were registered, and a total of 6 sentences contained *su(s)*. In addition, the words that surround the possessive markers in the Spanish corpus often overturn their engaging force. For example, this occurs when the pronoun *su* appears in an imperative sentence (e.g., *Consulte con su ginecólogo o médico de cabecera*) or when the pronoun is used impersonally, not addressing the patient's personal circumstances directly, but rather referring to patients in general who could be in the same situation (e.g., *Es ideal para parejas que desean espaciar el nacimiento de sus hijos*).

Concerning self-mentions, *I* and *my* are also used to emphasise individuality and commitment on both sides. In the English corpus, doctors try to establish a closer relationship using the pronoun *I* (0.60%) in combination with the pronoun *you* (e.g., *I would urge you to follow my indications*). These attitude markers bring to light the person behind the professional, who adopts more of a caretaker role with a more compassionate and fraternal approach to the issue. The following example shows how the presence of personal and possessive pronouns shifts the register into a more amicable tone reinforcing the special care and interest for the patient and highlighting their uniqueness:

> *I* hope this information is helpful and does not compound your pre-existing confusion! *You* need to consult *your* regular doctor who will be in a better position to correlate *your* clinical picture with *your* blood sugar values.

The corresponding Spanish pronoun *yo* appears explicitly only once. However, it should be noted that in Spanish, personal pronouns are often omitted but implicit. If implicit and explicit mentions of these pronouns are taken into account, the frequency of this marker is similar in both corpora.

One last remark concerns the low incidence of the possessive adjective *my* (0.02%) in English and null in Spanish. On the two occasions in which it appears, it has a paradoxical effect since it does not seem to indicate an approximation or commitment on the doctor's part, but quite the opposite, a greater emphasis on the position of professional authority and interpersonal power of the practitioner: *My feeling is that you may not need anything more than to get a reappraisal from your dermatologist, My answer is based on the treatment of acne and tetracycline.*

The last set of interpersonal mechanisms that stand out in this study is related to communicative register variation. In general terms, this genre is made up of professional encounters between two standard or conventional relational identities (i.e., doctor and patient), expressed through communicative markers in tune with the good practices and prototype styles mentioned in the theoretical review. Depending on these choices, the register shifts from professional-formal to professional-casual and vice versa (Giménez-Moreno, 2006, 2020). In the corpora, we find clear examples of these normalised shifts, as Table 5 illustrates.

Register variation in the doctor-patient counselling process	
Formal Professional English	Formal Professional Spanish
I would definitely recommend	Se recomienda/ aconseja
Best would be to avoid	Hay que evitar
Do check in with your doctor	Consulte con su médico
I would urge you to have some tests	Deberían hacerle pruebas
Casual Professional English	Casual Professional Spanish
You must get your dad examined	Pensemos en el tratamiento precoz
Hard for you to explain? For me, it is perhaps harder to diagnose!	Un pene más grande no tiene por qué dar más placer
Better get rid of it!	Si hace caso y no lo repite mejor
Taking that will kill you	¿Y se pone maquillaje estando así?

Table 5: Register variation in the doctor-patient counselling process.

As these examples show, modal phrases (*would* and *conditionals*) and indirect speech markers (*Best would be / Lo ideal es*) are used to express more formality and deference, while imperatives and verbs of obligation are employed to generate a certain level of informality, ease and closeness, especially when dealing with delicate issues.

In addition to these regular register shifts, the analysis of our corpora also shows a frequent inclusion of features from other non-professional registers (i.e., family and amicable registers). In both corpora, we see typical expressions that correspond to personal or private relational identities (e.g., parents and children). For example, in the Spanish consultations, doctors alternatively use the familiar expression *hacer caca* and its professional correlate *defecar*. The amicable register is also observed in expressions such as *Don't do it*! or *Go ahead*! These deliberate register shifts are very significant because they show the intentional attitudinal effort of the doctors to get closer to the patients, going even beyond their professional conventions to

achieve greater understanding, impact, trust and, ultimately, follow-up by their patients for their own benefit.

In sum, doctors resort to specific interpersonal mechanisms (i.e., modality, engagement markers and register variation) to express their attitude towards the procedure they are carrying out.

4.3. Appraisal and mitigating mechanisms

The corpus analysis demonstrates the clear predominance of adverbial expressions of gradation as a concomitant appraisal mechanism. A significant number of intensifiers were registered, namely, adverbs reflecting high and low degrees. Table 6 below shows that although there was a wider range of intensifiers in English, the total frequency rate, including all the adverbs, was similar in both corpora with a total of 88 instances in English and 86 in Spanish. Those most commonly used in both corpora were *most* (0.14%), *very* (0.12%), *more* (0.11%) in English, and the corresponding adverbs *más* (0.52%) and *muy* (0.23%) in Spanish.

English corpus			Spanish corpus		
most	20	0.14%	*más*	49	0.52%
very	17	0.12%	*muy*	22	0.23%
more	16	0.11%	*siempre*	9	0.10%
even	15	0.11%	*incluso*	6	0.06%
quite	8	0.06%			
much	7	0.05%			
always	5	0.04%			

Table 6: Intensifiers in the English and Spanish corpora.

These intensifying adverbs are often combined strategically with other adverbs such as *unlikely*, *rápidamente* or *too* to achieve the patient's relief and to minimise or maximise the patient's concern (e.g., *The chances of getting a clinical infection are indeed most unlikely*, *Es muy importante que vaya rapidamente al especialista*). Similarly, the adverb *muy* (0.23%) is combined by Spanish doctors with words such as *rápida* or *remota* to emphasise the good news (e.g., *Las posibilidades de recaida son muy remotas*). On the contrary, a more significant impact was expected from some a priori predictable adverbial expressions that have finally proven occasional. One of them was *poco/s* (17

occurrences), with very low representation and usually combined with the term *problemas*. When used, it has the function of causing relief in the patient (e.g., *El liquen plano de la piel causa pocos problemas y no requiere tratamiento*. In the English corpus, *few* is generally used in expressions of time (e.g., *a few years*, *a few months*), not as an appraisal mechanism, attitudinal marker or emotional reliever. Remarkably, the same happens to the adjective *little*. Doctors only use them in set expressions or in combination with other terms that help relieve the patient, establishing the same correlation as in Spanish (e.g., *Oral contraceptive is only one of a few treatment options*).

Along with the intensifiers indicated above, another frequent adverb of great attitudinal relevance in this genre is *siempre* (0.10%), which is the third most frequently used adverb in the Spanish corpus (e.g., *En la infertilidad masculina debe siempre descartarse la existencia de un varicocele*). In the English corpus, *always* occupies eighth place in frequency (0.04%). However, as mentioned above, English doctors tend to use a wider variety of adverbs, alternating *always* with such as *quite*, *just* or *much* which are not correlated in the Spanish corpus.

The analysis also displays results about other significant mitigation mechanisms. The most relevant stance markers identified in our corpora are hedges. As described in Hyland (2019), hedges present the information as a possibility rather than a definite fact. They imply that the statement of the speaker or writer is based on logical reasoning and not on specific knowledge, mitigating the speaker's responsibility.

This mitigating function is developed more predominantly through modal verbs in both languages (e.g., *No treatment may be required*, *El dolor puede estar causado por una hernia inguinal*). Of the total number of words in each subcorpus, the percentages corresponding to modal verbs used more than 20 times in the English corpus are *can* (0.84%), *may* (0.67%), *would* (0.55%) *could* (0.30%) and *should* (0.28%); in the Spanish corpus are *poder* (1.57%), *deber* (0.55%) and *soler* (0.2%). Other mitigating verbs of similar nature are *seem* (0.06%) and *parecer* (0.04%). They are primarily used as a way of emphasising that they are tentative diagnoses but also to show deference and sensitivity to the patient on the issue (e.g., *It seems likely that it is nothing serious*, *Parece un caso de cefalea*). These results illustrate the fact that English doctors use a greater number and variety of modal verbs (425 instances in the English corpus) compared to Spanish doctors (252 modal verbs in the Spanish corpus).

Another strategy that is frequently observed is the mitigation of probability rates through adjective and adverbial forms. Spanish doctors frequently use

the term *posible* (0.11%), but this rate is doubled in the English corpus with the use of the synonyms: *to be likely* (0.11%) and *to be possible* (0.13). In both languages, doctors resort to these strategic words to put the patient and themselves at ease (e.g., *The condition is most likely to be a cherry angioma*. Again, the meaning of the adverb *probably* (0.04%), and its frequent collocation with *temporary problem* in the English corpus (e.g., *Be assured that this is probably a temporary problem*), do not find the same correlation with the Spanish *probablemente*, with only one mention. The same goes for the use of the adverb *usually* (0.11%) in the English corpus without a correlative presence in Spanish. In this latter case, its highest mitigating force is displayed in combination with a modal verb (e.g., *Then, the doctor usually can remove the IUD if needed*). Except for these cases where there are significant differences between languages, the remaining adverbial mitigators are used in similar rates, with contrasts in some usage preferences: *generally* (0.18%) and *generalmente* (0.05%), but *normalmente* (0.18%) and *normally* (0.14%). In all these cases, doctors intend to restate the norm and reassure the patient (e.g., *This condition is generally caused by stress / Este es un trastorno generalmente pasajero*).

All these findings demonstrate that English doctors use a larger and wider selection of mitigation strategies than Spanish doctors in current online consultations. These are attitudinal markers that facilitate the exchange of information, showing and raising respect, deference, sympathy and many other positive feelings.

4.4. Rhetorical and politeness strategies

The data revealed so far has proven that both corpora are clear examples of the dialogical complexity that characterise the control of emotions in this professional genre. This last section completes the representativeness of these corpora by reinforcing the significance of the politeness protocols (e.g., welcoming expressions), rhetorical figures (e.g., physiological metaphors), and conventional attitudinal jargon (e.g., to express care).

As mentioned previously, these encounters require taking into account the limitations of the mode of interaction, the vulnerability of the patient and the sensitivity of the issues discussed. These particular requirements force interlocutors to use strategies and mechanisms that are common outside the professional arena. The subsequent stance and register shifts, as illustrated in the above highlighted interpersonal strategies (section 4.2), incorporate other facilitating strategies such as humour, irony, hyperbole and emphasis. The

corpus shows many professional-to-familiar register shifts (i.e., from doctor-patient relational identities to parental relational identities) expressing sympathy with the patient through humour and ironical comparisons in exclamation sentences (e.g., *¡Más no siempre es mejor!*), especially combined with casual conventional jargon (e.g., *Normal!* And *do you all go to the loo so many times a day?*). This communication strategy is usual in both languages (0.8%); however, the English corpus uses exclamation and question marks, while the Spanish corpus tends to omit such punctuation devices (1.1%). These minor details make a certain difference in correctness and communicative politeness.

Conventional pathos-based rhetorical strategies (e.g., empathy, sympathy, pathopoeia, etc.) are also frequent to appeal to emotion and get the patient to open up in the initial moves, or leave in the best possible mood in the final moves of the consultation. The *ethopoeia* is a distinctive figure of this type of encounter (1.2%), where the doctors often put themselves in the place of the patients, expressing or echoing their feelings and their fears (e.g., *It is a relatively simple procedure I would not expect any problem.*, *Your confusion is not in any case unique*, *I would not be concerned.*). These rhetorical figures also include other characteristic emotions that reflect the frustration, exasperation or discouragement the interlocutors often feel. For example, there are 0.5% instances of *apagoresis* when the doctors show their impossibility to offer any more help and try to inhibit the patient from insisting (e.g., *Sorry, I'm unable to help you more on this.*)

Finally, characteristic jargon and lexical collocations a priori expressed to inform the patient also operate as rhetorical figures of attenuation or litotes with a significant emotional function. For example, in the Spanish corpus, the focus of many of these collocations (0.6%) is mainly concerned with the risks of treatment and their frequency, such as the combination of the noun *tratamiento* or *método* with adjectives such as *sencillo* or *efectivo* and the adverb *muy*, often also followed by the adjective *raro/s* (e.g., *La ligadura de trompas es un método muy efectivo, los casos de fallo son muy raros*).

So despite the fact that the doctors in both corpora use similar rhetorical and politeness mechanisms, their prevalence varies. Spanish doctors prefer to remain more detached with higher pervasiveness of the professional communicative register.

5. Conclusion

The present study has unfolded the most significant dimensions, components and mechanisms of the affective domain in online Spanish and English medical consultations. At a global communicative level, the participants in these interactions need training, awareness and decision-making principles covering behavioural and illocutionary dimensions such as good practice conventions, prototypical medical-style markers, phatic and descriptive protocols, empathetic behaviour indicators, and relational identity-shift strategies. This awareness and empowerment process, at a more precise discursive and linguistic level, involves knowledge and practice in specific sentiment markers, interpersonal mechanisms, appraisal and mitigation tactics, and rhetorical-persuasive strategies. Another interesting outcome applicable to both languages is that, although the average length of a doctor's online intervention is around 50 words, in reality, these physicians must be prepared to formulate short-interactive (around 15 words) and long-informative (around 200 words) interventions.

This analysis model also highlights significant results from a contrastive perspective. Despite their tight consultation schedules, Spanish doctors occupy 73% of the exchange making a noticeable effort to explain extensively, formulate elaborate questions and diagnose in more detail than English doctors, who in their 46% of the exchange are more focused on making patients explain themselves extensively, ask questions and express their concerns. It is evident that these represent two different communicative approaches or medical cultures (Kirschbaum & Fortner, 2012). This study demonstrates that the English approach exerts greater control over the emotions that emerge in this genre.

Sentiment markers are a valuable tool to measure the affective domain. Their more frequent use - both negative and positive - in the English interactions confirms the closer, more empathetic role on the part of English doctors, which contrasts with the very low representation of even positive items in the Spanish corpus, evidencing the doctors' detachment and avoidance of entering the personal sphere. Regarding interpersonal devices, the study highlights the complexity of the medical counselling function in this genre, and the narrow dividing line between the recommendation-command, most frequent in the Spanish corpus, and the recommendation-suggestion, most recurrent in the English corpus. This line is often marked merely by intonation and modality options, but it is very significant at the attitudinal

level. Similar differences are seen concerning appraisal and mitigating mechanisms, particularly in the frequency with which English doctors generalise and use gradation markers together with various expressions of probability to put the patient at ease. Finally, rhetorical and politeness strategies like irony and hyperbole also account for the affective domain in both English and Spanish doctors' interactions.

This compendium of strategies smooths the authoritative and sometimes daunting voice of the doctors, bringing them closer to their patients and creating a more relaxed, affable, and respectful environment conducive to dialogue, complicity and, ultimately, communicative efficiency. Learning about these mechanisms ought to be a must in Spanish and English curricula for medical students and practitioners. Instruction in these linguistic skills should be included in university undergraduate and postgraduate medical degrees, and in specific professional training courses (Al-Zyoud et al., 2021). The proposed model, strategies and examples could facilitate communication in these encounters, and help design future courses and research.

The present study also evidences different attitudes among British and Spanish doctors when dealing with patients' emotions online, leaving open the question of whether this variance lies in different sensitivities, in diverse models of care or if this could be related to dissimilarities in university medical training cultures. Given the irregularity of this instruction in university degrees worldwide, Haas-Gehres (2021) states, awareness and management of diverse cultural sensitivities should be essential skills in the curriculum for all health professionals. Therefore, further comprehensive comparative analyses of these differences could provide valuable information, particularly if larger corpora of online medical interactions were used, contrasting more languages and contemplating more comprehensive attitudinal analyses.

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