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Will Jargon Use Increase or Decrease a Doctor's Credibility? Exploring the Moderating Effects of eHealth Literacy and Question Type

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Completed Research Paper

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Abstract

Doctors are accustomed to using jargon to communicate in online medical communities, but is it actually effective? In this article, we propose two diametrically opposed mechanisms of jargon use that affect patients' confidence in providers of online medical consultation services: The use of jargon affects competence-based confidence positively, but negatively on benevolence- and integrity-based trust. We take into account the moderating effects of eHealth literacy and question type to better comprehend the circumstances in which jargon use is at play. To test our conceptual model, we conduct a scenario experiment and then use a survey method to collect 203 valid questionnaires. Finally, we discuss our findings, their implications for theory and practise, and the study's limitations.

Keywords: Online medical consultation, jargon use, trust, eHealth literacy, question type

Introduction

Since the outbreak of the COVID-19 pandemic, the shortage of medical resources caused by epidemic prevention and control has brought great challenges to medical and health institutions globally. The rapid advancement of information and communication technology has made it possible for the healthcare sector to aggressively pursue integration with the Internet at the same time. This has resulted in the emergence of online health websites and online health communities that offer remote medical information and services to patients. These platforms could help with the issue of scarce medical resources and their uneven distribution across different areas (Van der Eijk et al., 2013). It is worth mentioning that the primary service offered by these platforms is online medical consultation (OMC) between doctors and patients (Sims, 2018; P. Wang et al., 2020), which is facilitated by communication technology. Through text, voice, picture, or video-based communication with doctors, patients can receive expert diagnoses and treatment plans (Lei et al., 2021). In many nations, including the United States and China, online medical consultation is in a flourishing stage. Government-sponsored online medical consultation services are becoming more and more well-liked among internet users (Gong et al., 2019). According to recent statistics, the number of Chinese who once received online medical services has reached 300 million and is continuously growing since 2020[1].

[1] http://www.gov.cn/xinwen/2022-09/01/content_5707695.htm

While online medical consultation improves the convenience of physician-patient interaction, it also introduces new challenges such as comprehension barriers and trust issues, posing complex problems in real-world practice. Trust is pivotal not just as an essential service attribute but also as a crucial assurance mechanism in the online sphere (Bauman & Bachmann, 2017). However, the online environment presents additional difficulties for doctors to earn patients' trust due to the risks posed by the Internet (Y. D. Wang & Emurian, 2005). As the foundation of the physician-patient relationship, trust has emerged as the most salient characteristic of OMC (Wan et al., 2021). While previous studies have examined factors such as subjective norms, doctors' narratives, information, and service quality, online reputation, and so forth that influence doctor-patient trust in online medical consultations (Cao et al., 2020; Gong et al., 2019; Wu et al., 2022; X. Zhao & Mao, 2021), few have explored the effect of jargon use. Research has unveiled that deploying jargon in posts impacts the perception of source credibility (Fang et al., 2022). The experimental findings indicate that laypersons' grasp of commonly-used medical jargon is subpar (Pieterse et al., 2013). Moreover, jargon in online health forums may adversely influence people's perceived trust in the communicator (Zimmermann & Jucks, 2018). On the other hand, research has found that patients' trust in doctors is positively influenced by expertise (Rhodes, 2020), while appropriate use of jargon could reflect the level of a doctor's expertise, which is conducive to the construction of patient's trust (Heritage & Maynard, 2006). Therefore, the theoretical mechanism behind the relationships between jargon use and trust in the context of OMC is not fully explored. Whether the use of medical jargon increases or decreases patients' trust in doctors awaits further investigation.

Further, the aforementioned existing literature does not take potential moderating variables into account. From the perspective of the patient's ability, existing research lacks consideration of the user's (patient's) self-dimension ability such as health literacy, which has been pinpointed as exerting a marked influence on interactions between physicians and patients (Al Sayah et al., 2014). In the context of OMC, electronic health literacy (eHL) is clearly more suitable to represent the ability that helps patients better understand the information provided by doctors on digital platforms than health literacy. Abundant research indicates that eHealth literacy (eHL) is substantially correlated with patients' online informational conduct, doctor-patient relationship, patient compliance, and perceived credibility in online information (Mitsutake et al., 2016; Paige et al., 2017). Without considering the effects of eHealth literacy, the differences in understanding physicians' professional expressions by patients with varying eHL levels may be overlooked. This could play a role in how jargon use affects trust.

As to the essence of OMC, it is a kind of internet-based remote patient-doctor medical consultation, which could be abstracted into Question and Answer (Q&A) mode conversations between the questioners and information providers in professional platforms (Al-Mahdi et al., 2015). Different types of questions raised by the users reflect their varying information needs (Choi et al., 2014). The question type could serve as crucial information to help the physicians answer the questions in a more appropriate way that is conducive to the construction of doctor-patient trust.

In this paper, we concentrate on how the use of jargon affects patients' trust in the context of OMC. Motivated by the concept of trustworthiness, we divided the construct into 3 dimensions as competence, benevolence, and integrity (Mayer et al., 1995). The path differences in the effects of jargon use on trust have been verified by existing studies in the field of marketing (Fang et al., 2022). It is worth investigating whether there are similar effects that exist in OMC. Besides, our research investigates how patients' eHealth literacy and the types of questions they raised may affect the association between jargon use and multidimensional trust. By taking eHL and question type into account, we can better judge whether doctors should use jargon in different situations and with different patients from the perspective of patients' own capabilities and needs. The research results will further improve the research on the influencing mechanism of doctor-patient trust, and provide guidance and suggestions for online medical platforms and doctors who provide OMC services.

The balance of this paper is structured as delineated below. We first classify the literature and theoretical underpinnings. Then, the conceptual model and hypotheses of this paper are proposed. After that, we introduce the main research methods and report the results of data collection and analysis. Finally, we summarize and discuss the research conclusions, theoretical contributions, practical significance, and limitations of the paper.

Literature Review

Jargon Use

Jargon is defined as technical terms used in a specific context or field to demonstrate expertise and convey ideas within specific groups (Sharon & Baram-Tsabari, 2014). Within the healthcare context, medical jargon is a second language used by healthcare professionals to streamline communication by using specialized terms (Roter, 2011). However, the habitual use of medical jargon by doctors may lead to the overuse of technical terms in their communication with patients. (LeBlanc et al., 2014), which can have negative effects on communication effectiveness (Deuster et al., 2008). In addition, the use of medical jargon inappropriate to the audience can lead to a decrease in experts' credibility in online health forums (Zimmermann & Jucks, 2018). Existing studies suggest that the use of medical jargon may hinder patients' understanding and trust in healthcare professionals, leading to increased perceived risks (Bullock et al., 2019; Castro et al., 2007; Zimmermann & Jucks, 2018). However, the specific influencing mechanism of how jargon influences patients' trust needs to be further explored. The research on medical jargon is mostly about the relationship between it and trust as a whole, and few papers are about the subdivision of the trust system, and then explore the relationships between the use of jargon and different dimensions of trust respectively. While most existing research indicates that the use of medical jargon has a negative effect on the trust in the doctor-patient relationship, few studies have explored whether other factors contribute to the negative effects of medical jargon on the doctor-patient relationship. Therefore, this paper will attempt to explore the differences between the effects of medical jargon on the three dimensions of trust (competence-based, benevolence-based, and integrity-based), and comprehensively examine the possible roles of other factors in the path of jargon's influence on three-dimensional trust.

Patient Trust

Trust plays an essential role in the doctor-patient relationship, especially when a patient encounters doctors on the Internet. In OMC, the lack of in-person interaction makes it more difficult to ask patients to provide multifarious private and financial information(Yang et al., 2022). Healthcare providers need to convince the patients of their competence and reliability to give a satisfactory answer online. Studies have shown that the patients' adoption, and continuance intention of OMC depend largely on their trust in service providers (Anderson & Agarwal, 2011; Guo et al., 2016). Patient trust is supposed to have an influence on the willingness to pay since they cannot easily assess the quality of OMC services (D. J. Kim, 2014).

For the services which are provided on the IT platform, online trust can be conceptualized as a combination of interpersonal and technological trust (McKnight & Chervany, 2001). Interpersonal trust measures trust between people from three dimensions: competence, benevolence, and integrity according to the concept of trustworthiness (Mayer et al., 1995). Technological trust reflects more on the effect of the channel. It is developed through direct experience and use and is influenced by the design of the technology (Hoff & Bashir, 2015). Since this study focuses more on the social relationship between patients and doctors but not on what platform itself contributes to the online interaction process, we chose interpersonal trust as the representative of our research object.

Interpersonal trust denotes patients' subjective conviction that an online healthcare practitioner will honor their obligations. It can be scrutinized as discrete categories, encompassing competence-based, benevolence-based, and integrity-based trust (P. H. Kim et al., 2004). In the healthcare field, competence-based trust refers to the belief that the physician has adequate knowledge, expertise, and skills in related domains; benevolence-based trust denotes that the patients believe the professionals are concerned about their interests, will do their best to help others; and integrity-based trust is the belief that the OMC providers will adhere to a set of sound principles and treat patients sincerely (Tomlinson & Mryer, 2009; Xie & Peng, 2009). Conceptual differences determine that the three types of trust have different emphases and characteristics in the doctor-patient relationship. Therefore, it is worthwhile to study them separately in exploring the relationship between jargon use and patient trust.

eHealth Literacy and Question Type

Health literacy is defined as the ability to garner, process, and comprehend elementary health information and provisions requisite to make judicious health determinations (Kindig et al., 2004). Studies have shown

that people with limited health literacy benefit less from the available health information (Kandula et al., 2009); patients with poor functional health literacy usually have more difficulties communicating with doctors(Schillinger et al., 2004). In the digital age, more and more people access health information online. Therefore, some scholars put forward the concept of "electronic health literacy" on the basis of health literacy. E-health literacy refers to the ability to find, understand and use health information to solve health problems by using electronic platforms such as the Internet (Norman & Skinner, 2006b). It has been demonstrated that elderly cancer patients with low eHealth literacy are less confident in evaluating online health information for cancer decision-making (Verma et al., 2022). On the other hand, eHealth literacy was found to play a key role in people's perceived trust in online health communication channels and information sources (Paige et al., 2017). Thus, we aim to investigate whether eHealth literacy serves as a moderator in the relationships between jargon use and the three-dimensional perceived trust of patients, as some studies suggest that patients with low health literacy may face communication difficulties when doctors use jargon(Schillinger et al., 2004).

The OMC services can be abstracted into Q&A conversations between the patients and providers. Compared with common social Q&A services, OMC is more similar to an expert-based Q&A service since most of the providers are healthcare professionals and many OMC services include pricing systems, referred to as a price-based knowledge market (Chen et al., 2010).

The common questions in online Q&A services can be classified into four types as *information-seeking*, *advice-seeking*, *opinion-seeking*, and *non-information-seeking* for research on the effect of different types of questions (Choi et al., 2012). The ways to classify questions vary. Questions can be divided into subjective and objective types according to subjectivity (Li et al., 2008). Besides, questions in the Q&A community can also be identified as *conversational* ones or *informational* (Harper et al., 2009). In the healthcare domain, it has been ascertained that patients are inclined to pose queries appertaining to multiple topics: diagnosis, management/treatment, laboratory report, test, risk, and prognosis (Reynolds et al., 2017). Given the reality of online medical services in China, in this study, we divided questions in OMC into 2 types, one is *Diagnosis-related*, and the other is *Treatment-related*, which could represent the most common categories of questions in Chinese online medical platforms. The *Diagnosis-related* means question is mainly about patients' need for diagnosis and the cause of their symptoms. The *Treatment-related* question, on the other hand, reflects the motivation to obtain actionable suggestions for treatment (Zhang et al., 2019). In a Q&A communication, the question type reflects the questioner's knowledge needs and motivations (Choi et al., 2014). And it has been suggested that question type will influence the quantity and quality of online answers (Bradley et al., 2008), and different types of questions are appropriate to raise in different Q&A modes (Choi et al., 2012). As a result, there could be a correspondence between question types and answers. It is worthwhile to investigate the role that question type plays in OMC services.

Research Model and Hypotheses

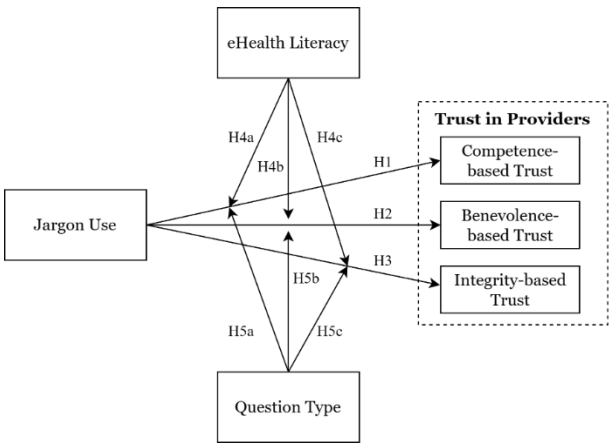

Figure 1. Research Model

Effects of Jargon Use on Trust

In the field of health care, jargon is defined as words or phrases that are difficult to understand for those who lack medical training and medical exposure (LeBlanc et al., 2014). Previous studies have shown that frequent use of medical jargon will adversely affect the effect of doctor-patient communication (Deuster et al., 2008). In this study, trust refers to the trust between users and providers of OMC services, namely patients' trust in doctors on online medical platforms. We divide users' trust in OMC service providers into three dimensions: perceived trust based on competence, benevolence, and integrity. Currently, research shows that the use of jargon can enhance the professionalism of content by employing more professional terms to convey specialized knowledge (Hu et al., 2021), Users' perceived expertise leads them to believe in the competence of content providers (Levin et al., 2002). With regard to benevolence-based trust, studies have pointed out that experts who used less medical jargon were perceived as having more integrity and benevolence than those who used a high level of medical jargon in online health forums (Zimmermann & Jucks, 2018). Layperson's understanding of commonly-used jargon is suboptimal, even the use of some simple jargon terms may lead to negative emotions and incomprehension of the patients (LeBlanc et al., 2014; Pieterse et al., 2013). Thus, the more jargon doctors use, the more patients feel their interests are not being adequately considered. As the most crucial reason for patient distrust in physicians, the information asymmetry between the two parties will be strengthened by jargon then causes more serious damage to the doctor-patient trust based on benevolence. (D.-H. Zhao et al., 2016). As a healthcare provider, integrity refers to one's adherence to medical ethics. In the context of clinical care, inappropriate use of medical jargon might cause the patient's misunderstanding to the procedures and goal of treatment, then conduce to suboptimal prospective care blueprinting and inappropriately aggressive life-sustaining ministration in end-of-life settings (LeBlanc et al., 2014). The inappropriate use of medical jargon violates the principle of "informed consent," one of the fundamental tenets of medical ethics. Without fully understanding the procedures and treatment options, patients cannot make genuinely informed decisions about their care (Kurtz, 2002; Varkey, 2021). This undermines patients' trust in their physicians' integrity. Based on the above, we believe that when physicians use jargon in OMC services, users' trust in the capability of the service providers increases, while their trust in the benevolence and integrity of the provider decreases accordingly. This paper proposes the following hypotheses:

H1: Jargon use has a positive effect on competence-based trust.

H2: Jargon use has a negative effect on benevolence-based trust.

H3: Jargon use has a negative effect on integrity-based trust.

Moderating Effects of eHealth Literacy

E-health literacy alludes to the aptitude to utilize health information from electronic resources to resolve their own health problems, the higher the eHealth literacy, the stronger the ability of the user to retrieve and process the online health information (Norman & Skinner, 2006b). E-health literacy constitutes the impacting determinant of patient dimension. Patients with limited eHealth literacy are susceptible to the influence of medical jargon and cannot understand online health information well (Smith & Magnani, 2019). By contrast, people with higher eHealth literacy can utilize their retrieval ability to search for and understand the relevant jargon in the information service provided by doctors. It means the content specialty will be reduced since users' understanding of jargon gets improved, which leads to their competence-based trust in physicians will be less affected by jargon (Hu et al., 2021; Levin et al., 2002). It has been demonstrated that people with higher eHealth literacy can skillfully use a variety of tools and platforms to solve health problems, and their dependence on specific platforms or service will be reduced (Min et al., 2017). Consequently, compared to the average person, it's easier for the patient with a high level of eHealth literacy to fully comprehend the medical information and judge whether the professional's response truly takes personal interests into account. Meanwhile, the information asymmetry between physicians and patients could also be mitigated because highly eHealth-literate patients are better able to overcome obstacles in obtaining professional medical knowledge (D.-H. Zhao et al., 2016). Then the negative effect of using jargon on benevolence-based trust will be diminished. In addition, given that users with high eHealth literacy tend to utilize various tools to better understand the information provided by doctors and attain other health knowledge they need, it is easier for them to grasp the procedures and treatment options, enabling them to make informed decisions regarding their care. As a result, medical

jargon causes less doubt about the doctor's integrity for highly eHealth-literate patients, so the correlation between the use of jargon and trust based on integrity will be weakened. Therefore, the following hypotheses are proposed in this paper:

H4a: E-health literacy could weaken the relationship between jargon use and competence-based trust.

H4b: E-health literacy could weaken the relationship between jargon use and benevolence-based trust.

H4c: E-health literacy could weaken the relationship between jargon use and integrity-based trust.

Moderating Effects of Question Type

This study also explores the moderating effects of question type. It has been revealed that the types of questions will influence the questioners' credibility judgments of answers (S. Kim, 2010). In the Q&A communities, findings suggest that if users want to get objective information or facts from others, a collaborative Q&A model and an expert-based Q&A model may furnish a loftier possibility to get the questions resolved. However, if they are looking for others' thoughts, ideas, or recommendations, it is better to choose a community-based Q&A model or a social Q&A community (Choi et al., 2012). Therefore, as an expert-based Q&A service, since most of the providers are healthcare professionals, OMC services fit more with the questioners who ask an information-seeking question. According to the aforementioned definition of the four types of questions in Q&A communities, the question of seeking disease diagnosis and cause analysis(diagnosis-related) could be categorized as an information-seeking question, which reflects patients' needs for objective information about the symptoms. The analysis of the causes of symptoms should be derived based on medical theory, the presence of more jargon is reasonable. Since competence-based trust depends on the objectively perceived knowledge (Gottschling et al., 2020) and jargon is conducive to the content specialty (Hu et al., 2021), a certain degree of jargon use is more in line with patients' questioning motivation and information needs. Instead, when a patient raised a treatment-related question, it's better to give some clear, accessible, and actionable advice for treatment rather than an overly complicated answer with a lot of jargon. Consequently, it is more appropriate to use some jargon when the patient raises a diagnosis-related question. Thus, the following hypothesis is proposed:

H5a: Compared with the treatment-related question, when people ask a diagnosis-related question, the relationship between jargon use and competence-based trust will be strengthened.

However, when the patient's question is about how to restore the body to health(treatment-related), it is an advice-seeking type of question. People turn to doctors to seek actionable opinions but not theoretical knowledge (Reynolds et al., 2017). There is not supposed to be much jargon that is beyond the patients' understanding, which is not aligned with the motivation for questioning, otherwise, the response would be more like a misunderstanding of patients' needs and physicians would be seen as lack of consideration of patients' interest and competence, which will hinder people's trust in doctors' benevolence and integrity (Fang et al., 2022; Kurtz, 2002). Therefore, compared with treatment-related, when users ask diagnosis-related questions, jargon use is more in line with the motivation and knowledge needs of the questioner, so it is conducive to the effect of jargon use on competence-based trust and can weaken the negative effect of jargon use on benevolence-based trust and integrity-based trust. As a result, the following hypotheses are proposed:

H5b: Compared with the treatment-related question, when people ask a diagnosis-related question, the relationship between jargon use and benevolence-based trust will be weakened.

H5c: Compared with the treatment-related question, when people ask a diagnosis-related question, the relationship between jargon use and integrity-based trust will be weakened.

Methodology

Scenario Design

The present study utilizes situational experimentation as its empirical research approach. The "Question&Answer" mode is the standard mode used by several leading online consultation platforms in China. To construct the situation, we used the actual consultation scene from the xywy.com platform as a template. This website is one of China's most authoritative health consultation and disease diagnosis and

treatment websites, with over 150 million registered users and more than 320 million monthly visits, making it one of the best OMC service providers. To eliminate any potential bias or extraneous information, we excluded doctors' personal information, such as their name, rank, department, as well as the hospital's name and rating. We reduced the situation to a conversation scenario in which the patient asks questions and the doctor responds.

User questions on the online medical consultation platform can be classified into two categories: diagnosis-related questions that focus on clarifying the causes of their symptoms, and treatment-related questions that focus on consulting for symptom relief and disease-specific treatments. These two types of questions reflect the different needs of patients, and both occur frequently on the platform. In real cases, doctors typically explain both the causes and the treatment plans for most questions. Therefore, we designed the doctor's responses which simultaneously include answers to both types of questions.

Regarding jargon use, we established two levels of usage (high and low) in the doctor's response. We made sure that the general content of the response remained the same and only distinguished between "using jargon" and "in plain language" for some key expressions. A 2x2 scenarios matrix was constructed based on the aforementioned types of questions, as shown in Figure 2.

Figure 2. Scenario Design

Scenarios design mainly controls the level of jargon use and the types of questions patients ask. In the experiment, subjects were randomly assigned to one of four scenarios: (Question type: diagnosis-related, treatment-related) × (Jargon use: high-level, low-level). The final scenarios are shown in Figure 2 (diagnosis-related×high-level: top left; diagnosis-related×low-level: top right; treatment-related×low-level: bottom left; treatment-related×high-level: bottom right).

Pre-Experiment

Before the formal experiment, we invited 16 netizens with experience of online medical consultation to participate in the survey to test the suitability of our scenario design. In the original scenario design, in order to restore the real scene of the online consultation platform to the greatest extent, we retained the doctor's personal information, hospital information, evaluation information replied to by the doctor, and other irrelevant information. According to the results of questionnaire collection and the feedback of subjects, we found that this information may affect users' judgment of online consultation services. Therefore, we decided to exclude this information in the final scenario and only included the patient's questions and the doctor's responses, along with a few additional elements to enhance the realism of the scenario without drawing too much attention from the participants.

Survey instrument

There are 6 core variables involved in the model, and each variable is composed of 2~5 measurement items. In order to ensure the reliability and validity of variables, all measurement items, except question type, were derived from the mature scale commonly used in relevant subject literature, and adjusted to some extent based on the characteristics of online medical consulting services. The variable score is set by Likert seven-component scale. Respondents select one of the seven options, ranging from Strongly Disagree to Strongly Agree respectively, which are calculated as 1~7 points.

Specifically, as to jargon use, the two measurement items are JU1 ~ JU2 (Fang et al., 2022), subjects self-judged the level of jargon usage of the response in their assigned scenario, and the average scores represent the level of jargon use. Trust based on competence, benevolence, and integrity is successively measured as CT1-CT5, BT1-BT3, and IT1-IT4 (Xie & Peng, 2009). The measures of patients' eHealth literacy are eHL1 ~ eHL3 (Norman & Skinner, 2006a), the respondents evaluated their own eHealth literacy according to the questionnaire items. The measures of patients' questioning types are QT1 ~ QT2, the scores of QT2 were reversely coded so that lower scores indicate a higher level of QT.

Data Collection

According to the results of the preliminary survey, the questionnaire situation and related measures were modified. Given that university students are usually more accustomed to embracing emerging technologies like online medical systems. We take Wuhan University students (including undergraduates, masters, and doctors) who have experience in using online medical platforms (taking the initiative to ask a doctor or browsing the consultation information of similar questions) as the main survey objects, and employed a convenience sampling approach, distributing questionnaires via social media platforms and received 262 responses. We excluded 16 questionnaires for subjects who have no experience in using online medical platform, and dropped 43 cases with an unfinished questionnaire or other unqualified data (e.g., the same answer to almost all questions, less than 1 min for completion), and retained 203 valid responses (77.2% response rate). Table 1 shows the basic information for the valid sample. In the study, 51.2 percent of respondents were male and 48.8 percent were female. The survey targets are mainly young people with a certain level of education. The age distribution is concentrated between 20 and 29 years old, and most of the highest education is bachelor's degree or above. Furthermore, the frequency of subjects browsing online medical consultation information was significantly higher than the frequency of asking questions themselves. In the past year, three-quarters of the respondents browsed online medical consultation information.

Variables	Category	Frequency	Percentage (%)

Gender	Male	104	51.2
	Female	99	48.8
Age(years)	19 or younger	37	18.2
	20-29	122	60.1
	30-39	19	9.4
	40-49	12	5.9
	50-59	9	4.4
	60 or older	4	2.0
Education	Junior high school or lower	2	1.0
	High school	25	12.3
	Junior college	20	9.9
	Undergraduate	124	61.1
	Postgraduate or higher	32	15.8
Frequency of viewing consultation information (Within one year)	Never	51	25.1
	Scarcely	39	19.2
	Occasionally	37	18.2
	Sometimes	32	15.8
	Often	29	14.3
	Usually	11	5.4
	Always	4	2.0
Frequency of consultation participation (Within one year)	Never	76	37.4
	Scarcely	49	24.1
	Occasionally	41	20.2
	Sometimes	20	9.9
	Often	9	4.4
	Usually	5	2.5
	Always	3	1.5

Table 1. Respondents' Demographics

Data Analysis

Manipulation Check

To check whether variables were effectively controlled in the scenario design, we used independent sample T-test to compare the mean of variables from different controls by the SPSS 26 software. The test results are shown in Table 2. There were significant differences between different patient problem types and the degree of jargon use, which indicated that the situation design had a certain degree of differentiation and the results were effective.

Variables	Type	Case Number	Mean	Mean Difference	T-Value
Jargon	High-level	104	5.423	1.721***	9.030
	Low-level	99	3.702		

Question Type	Diagnosis-related	100	5.33	1.951***	9.812
	Treatment-related	103	3.3786		

Table 2. Independent-Samples T-Test

Measurement Model

Given the exploratory nature of this study and the small sample size with a non-normal distribution, the PLS-SEM approach was chosen over CB-SEM as a more appropriate method(Chin, 2009). We used SmartPLS3 software to complete the questionnaire reliability and validity measurement. Specifically, we test the reliability, convergence validity, and discriminant validity of variables by Cronbach's Alpha (CA), Composite Reliability (CR), Average Variance Extracted (AVE), and correlation matrix. It is generally believed that when CR and CA values are both greater than 0.7 and AVE value is greater than 0.5, the questionnaire has good internal consistency. As shown in Table 3, AVE values, CR values, and CA values of latent variables in this questionnaire all meet the recommended standards, so they have good reliability and internal consistency. The values on the diagonal in Table 3 represent the square root of AVE, and the remaining values are the correlation coefficients between the corresponding variables. The consequences indicate that the AVE square root values of all latent variables in the model surpass the correlation coefficients amid variables, that is, all factors have good discriminant validity.

	CA	CR	AVE	Mean	SD	CT	BT	IT	JU	QT	eHL
CT	0.917	0.938	0.751	4.958	1.189	**0.866**					
BT	0.918	0.948	0.860	4.793	1.319	0.104	**0.927**				
IT	0.915	0.940	0.796	4.988	1.116	0.269	0.775	**0.892**			
JU	0.906	0.955	0.914	4.584	1.605	0.506	-0.294	-0.105	**0.956**		
QT	0.718	0.848	0.740	4.340	1.718	0.188	0.173	0.179	0.097	**0.860**	
eHL	0.904	0.940	0.839	4.897	1.263	0.328	0.359	0.350	0.107	0.100	**0.916**

Table 3. Construct Correlations and Discriminant Validity

Note: CT=Competence-based Trust, BT=Benevolence-based Trust, IT=Integrity-based Trust, JU=Jargon Use, QT=Question Type, eHL=eHealth Literacy, CA=Cronbach's Alpha, CR=Composite Reliability, AVE=Average Variance Extracted, SD=Standard Deviation, Diagonal values represent the square root of AVE.

As can be seen from Table 4, the factor loadings of all measures are above 0.725, and the loadings of each item on the corresponding factor are greater than the cross-loadings on other factors. This indicates that the measure items can reflect the corresponding variables effectively.

	CT	BT	IT	JU	QT	eHL
CT1	**0.905**	0.066	0.217	0.517	0.213	0.302
CT2	**0.886**	0.104	0.225	0.484	0.18	0.27
CT3	**0.877**	0.106	0.267	0.457	0.137	0.343
CT4	**0.865**	0.134	0.264	0.344	0.124	0.271
CT5	**0.796**	0.041	0.197	0.347	0.147	0.219
BT1	0.087	**0.933**	0.748	-0.266	0.136	0.34
BT2	0.123	**0.924**	0.675	-0.248	0.178	0.342
BT3	0.08	**0.924**	0.733	-0.302	0.168	0.316
IT1	0.262	0.714	**0.887**	-0.077	0.168	0.322

IT2	0.255	0.626	**0.893**	-0.068	0.151	0.275
IT3	0.262	0.709	**0.899**	-0.047	0.188	0.304
IT4	0.19	0.707	**0.89**	-0.168	0.134	0.341
JU1	0.502	-0.288	-0.118	**0.96**	0.058	0.111
JU2	0.463	-0.274	-0.08	**0.952**	0.131	0.092
QT1	0.191	0.201	0.201	0.129	**0.977**	0.112
QT2	0.111	0.025	0.045	-0.036	**0.725**	0.028
eHL1	0.321	0.335	0.341	0.128	0.045	**0.932**
eHL2	0.318	0.349	0.317	0.089	0.132	**0.921**
eHL3	0.258	0.298	0.303	0.073	0.099	**0.894**

Table 4. Loadings and Cross Loadings

Structural Model

Regarding the structural model, this study employed the bootstrapping function in SmartPLS 3.0 to test the hypotheses. The verification results of all hypotheses in the model are illustrated in Figure 3.

Specifically, the effect of jargon use on competence-based trust was found to be positive (β=0.435, p<0.001), while its negative effects on benevolence-based trust (β=-0.362, p<0.001) and integrity-based trust (β= -0.167, p<0.05) were also significant. This indicates that H1, H2, and H3 were supported. In terms of moderating effects, eHealth literacy was shown to negatively moderate the relationship between jargon use and competence-based trust (β=-0.115, p<0.05), benevolence-based trust (β=0.176, p<0.01) as well as integrity-based trust (β=0.215, p<0.01), which confirms H4a, H4b, and H4c. Additionally, the positive moderating effect of question type on the relationship between jargon use and competence-based trust was significant (β=0.226, p<0.001), thus, H5a was substantiated. However, the moderating effects of question type were not significant in the other two relationships.

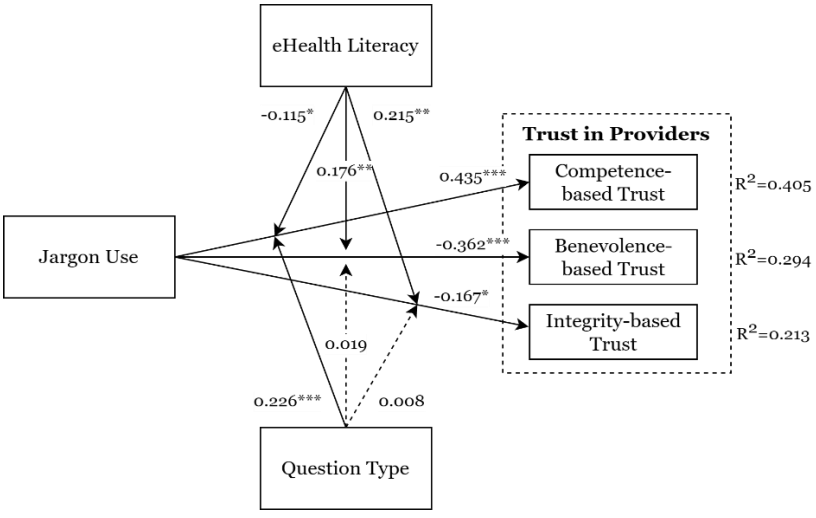

Figure 3. Results of hypotheses testing

Discussion and Implications

Key Findings

This study aims to explore the relationships between jargon use and patients' trust in online medical consultation services providers. Based on the concepts of trust and trustworthiness, we divide perceived trust into three dimensions: competence-based trust, benevolence-based trust, and integrity-based trust (Mayer et al., 1995), and explore the differences in the effects of jargon use on different dimensions of trust. In addition, we explored the role of the two influencing factors, eHealth literacy, and question type, in the above relationships, that is, whether the two can play a moderating role in the relationships between jargon use and three-dimensional trust. The main research conclusions are as follows:

First, the use of jargon has a direct positive effect on competence-based trust but has significant negative effects on trust based on benevolence and integrity. This result is consistent with the mechanism of jargon's effects on trust proposed by scholars in the field of marketing (Fang et al., 2022).

Second, eHealth literacy can weaken the relationships between jargon use and the three dimensions of patients' trust in physicians. Compared with ordinary people, highly eHealth-literate patients are better at understanding the meaning of jargon through information retrieval and other means. Therefore, they are less likely to generate competence-based trust in physicians just because of jargon use. In addition, due to the higher ability to comprehend physicians' words and acquire other health knowledge, the information asymmetry between physicians and patients could be mitigated while the patients will be less inclined to suspect that doctors do not abide by basic professional principles. Therefore, a higher level of eHealth literacy will lead to the weakening of the positive effect of jargon use on competence-based trust and the negative effects of it on trust based on benevolence and integrity.

Third, the positive relationship between jargon use and competence-based trust is strengthened when patients ask questions that are diagnosis-related compared to treatment-related questions. This is consistent with previous research finding that information-seeking questions are better suited to be asked in expert communities and the use of jargon is positively related to the degree of content specialty (Choi et al., 2012; Hu et al., 2021). For information-seeking questions like diagnosis-related questions raised by patients, professional responses are more in line with the information needs of patients, thus the relationship between jargon use and competence-based trust will be strengthened.

However, question type works insignificantly on the relationships between jargon use and benevolence-based or integrity-based trust. We suspect that although specialized content is more in accord with patients' information needs, as ordinary people, patients cannot still understand medical jargon. The resulting doubt is not mitigated by the fact that the answers fit the motivation of the questions. Satisfying the questioner's need for objective information only helps to demonstrate professionalism and build competency-based trust.

Theoretical Contributions

This study makes a significant theoretical addition to academia. First off, by highlighting the crucial role of jargon use, the existing research on patients' trust in the context of OMC is extended. From the patient's perspective, this study examines the influences of physicians' jargon use. The findings demonstrate that eHealth literacy has important moderating effects on the relationships between jargon use and multidimensional trust, which suggests that future researchers should focus more on the patient perspective and investigate the role of patients' eHealth literacy in online medical services.

Second, this study extends the research on the effect of question type on the association between the use of jargon and trust. This paper classified online medical consultation into 2 modes in the Q&A community and deduces and validates the moderating effect of question type on the relationship between jargon use and trust. The types of questions reflect the questioner's motivation and information needs while the use of jargon is an expression habit of respondents in answering questions. When the two are matched, the jargon has a more positive effect on the competence-based trust relationship between the questioner and the responder.

Thirdly, the previous research mainly takes trust as a whole and explores the relationship between it and variables such as subjective norms, perceived benefits, perceived risks, and service adoption in the field of healthcare (Gong et al., 2019). This research highlights the variations in mechanisms between the various dimensions of trust. As for the use of jargon, the subdivision of the trust dimension is conducive to a more rigorous observation of the influencing mechanism of jargon on doctor-patient trust.

Practical Implications

This study has some practical applications worth in addition to its theoretical contribution. Specifically, it can inform the design of online medical consultation systems from 2 perspectives.

From a socio-aspect, the platform should uniformly train contracted doctors and remind them to give due consideration to whether jargon should be used when communicating with patients online. Although jargon use can strengthen patients' competence-based trust in doctors to some extent, using jargon is still not recommended, especially for ordinary patients with limited eHealth literacy. It has been pointed out that the three dimensions of trust, benevolence, and integrity contribute more to trust (Minza, 2019), which means jargon use still led to lower trust as a whole between doctors and patients. Using some jargon is appropriate only if physicians can be sure to encounter patients with a high level of eHealth literacy. Besides, healthcare providers should examine the question carefully and determine the type of it before answering. If the patient is seeking a diagnosis, they are generally more accepting of the use of jargon. Instead, doctors need to respond more carefully and use as straightforward language as possible if the patient requires actionable advice.

From a technical aspect, emerging technologies like conversational agents and generative AI may be integrated into online medical consultation systems in the near future. According to our findings, those AI-based tools should be designed to accurately identify question types and assess users' eHealth literacy levels when OMC services commence, then remind doctors what needs to be explained or clarified according to different conditions, and help them adjust the reply method and content, thereby enhancing the credibility of the doctors and improving user experience.

Limitations and Future Work

Although the research findings of this study have made some contributions to the academia and industry of the healthcare field, it also has some limitations. First of all, we acknowledge that the convenience sampling strategy limits the generalizability of our results. As a whole, the sample in this study did not have a high frequency of active OMC, so they may be less familiar with online medical services compared to the general patient population. We plan to use more robust sampling methods to survey a wider range of patients with more active consultation experience across different demographic groups in the future study to reinforce the applicability of our findings. Besides, to further investigate the effects of question type on the relationships between jargon use and trust, we also take into consideration adding more question types, such as disease prevention, or categorizing patient questions in other ways. In addition, the primary focus of this research is the use of jargon, which represents one of the communication styles of doctors during online consultations. There are various ways of expression in the actual OMC scene as well, like instantiating. In consultation services, giving patients concrete examples may help them comprehend diagnosis and treatment information more thoroughly, increasing their confidence in medical professionals. Future research will focus on how other means of expression affect the patients' trust in online medical services providers.

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Appendix I

Constructs	Items	References
Competence-based Trust (CT)	CBT1. Given the scenario, I feel the doctor is very capable of meeting patient needs.	(Xie & Peng, 2009)
	CBT2. Given the scenario, I feel confident about the doctor's skill in solving such problems.	
	CBT3. Given the scenario, I see no reason to doubt the doctor's competence.	
	CBT4. Given the scenario, I can rely on the doctor to meet my expectations.	

	CBT5. Given the scenario, I believe the doctor is able to avoid the repetition of such problems.	
Benevolence-based Trust (BT)	BBT1. Given the scenario, I believe the doctor has a great deal of benevolence.	
	BBT2. Given the scenario, I am confident that when patients have problems, the doctor will respond constructively and with care.	
	BBT3. Given the scenario, I rely on the doctor to favor the patient's best interest.	
Integrity-based Trust (IT)	IBT1. Given the scenario, I believe the doctor is honest.	
	IBT2. Given the scenario, I believe the doctor has a great deal of integrity.	
	IBT3. Given the scenario, I believe sound principles guide the doctor's behaviors.	
	IBT4. Given the scenario, I believe the doctor has a good value system.	
Jargon Use (JU)	JU1. To what extent does the doctor use specialized terms?	(Fang et al., 2022)
	JU2. The content has rich professional vocabulary.	
Question Type (QT)	QT1. I think the patient's question focuses on getting the cause of the symptom.	/
	QT2. I think patients' question focuses on getting treatment suggestions.	
eHealth Literacy (eHL)	eHL1. I know how to find helpful health resources on the Internet.	(Norman & Skinner, 2006a)
	eHL2. I know how to use the Internet to answer my health question.	
	eHL3. I have the skills I need to evaluate the health resources I find on the Internet.	

Table I. Measurement items