Review Article

Role of jargon in the patient–doctor communication in the dental healthcare sector—A systematic review and meta-analysis

Mohan Kumar P, Raghavendra Reddy Nagate[1], Saad Mohammad Alqahtani[1], Sankar Narayana Sarma G[2], Supraja S[3]

Abstract:

Medical terminology is useful for better communication between medical and dental professionals. Overzealous use of this terminology and use of medical terms during patient interaction hamper the complete understanding of the doctor's explanation about their health status. Nowadays, the usage of abbreviations or short terminology in health sectors has become common during all stages like the patient's initial visit, during the diagnosis, and even during the treatment plan stage. The objective was to know the commonly used jargon in the dental profession and to know the effect of the commonly used jargon on patient–doctor communication and treatment outcomes. Three major scientific databases were used as search engines PubMed, Web of Science, and Scopus by following three main search criteria, the common use of jargon in the dental profession, effect of jargon on patient–doctor communication, and treatment outcomes. An approach to meta-synthesis was used in the qualitative research methodology. With the Sandelowski and Barroso approach, meta-synthesis was carried out. Following database searches, during the years 2001 to 2022, 424 studies were gathered. Ten sources were then chosen and used in the analysis stage.Usage of jargon in dental professions has an effect on patient–doctor communication, and to an extent, it also has an effect on the treatment plan which further has its effect on treatment outcome.The correlation ratio (COR) of frequency of jargon is 0.46 (0.34; 0.57), with *P* value <0.0001, which indicates the presence of these issues in dental healthcare sector. The cautious use of jargon within the health profession will be beneficial in terms of professional communication with the patients and also helps in rendering better treatment to the patients.

Keywords:

Abbreviations, communication, health care, Jargon

Department of Periodontics, Vishnu Dental College, Bhimavaram, Andhra Pradesh, India, [1]Department of Periodontics and Community Dental Sciences (PCS), Division of Periodontics, College of Dentistry, King Khalid University, Abha, Kingdom of Saudi Arabia, [2]Department of Periodontics and Implantology, Government Dental College, Kadapa, Andhra Pradesh, India, [3]Department of Oral Pathology and Microbiology, Vishnu Dental College, Bhimavaram, Andhra Pradesh, India

Address for correspondence:
Dr. Mohan Kumar P, Associate Professor, Department of Periodontics, Vishnu Dental College, Bhimavaram, Andhra Pradesh, India. E-mail: mosups@gmail. com

Introduction

The medical/dental field has innumerable scientific or medical terminology. They are also filled with many abbreviations and shorthand technical terms for better and easier communication. All these professional groups only know and can understand the short and technical terms.[1,2]

Jargon is the use of often selected terminology by authors or researchers or practitioners or a particular group of people which is understood by that group only. Jargon in the medical or dental profession is selected words used to discuss the clinical condition of patients and during the treatment plan.

Definitions (According to Merriam-Webster's Dictionary)

1. "Confused/strange/unintelligent/ barbarous language/a hybrid language or dialect simplified in vocabulary and grammar and used for communication between peoples of different speech."

2. "The technical terminology or characteristic idiom of a special activity or group."
3. "Obscure and often pretentious language marked by circumlocutions and long words."

Jargon in medical and dental professions

Though the standard jargon is used among the healthcare sectors, unnecessary use of short abbreviations which are not standard for medical or dental use will act as barriers for both doctor–patient and also in between professional groups because of the overuse of jargon individually.[3,4]

Examples: Some of the commonly used jargons in medical and dental fields are: Pt. (patient), O/E (On examination), C/E (Clinical examination), D/D (Differential diagnosis), t.t (treatment), # (Fracture), LA (Local anesthesia), RS (Root stumps), NAD (No abnormality detected), NRMH (No relevant medical history), etc. These are the commonly used abbreviations or jargon that can be understood by particular medical or dental professionals only.[5,6]

When we use the same abbreviations while communicating with the patients and other peer groups, those who do not have the habit of using this jargon will face difficulties in understanding the exact condition and the treatment rendered to the patient when the other peer groups see the record during multi-disciplinary cases.[7,8]

Jargons are also used during the patient's initial visit, while explaining the present health condition of the patient, and also sometimes during discussing the type of treatment they are going to render to the disease condition. These stages should go smoothly by explaining to the patients all the possible treatment modalities and their success rates without the use of abbreviations or the terminology used should be standard medical/dental terms understandable by the people.[9,10]

The rationale behind this systematic review would advise all healthcare professionals to refrain from using jargon in clinical practice since it prevents misunderstanding among their peers and enhances patient–physician communication and understanding.

This systematic review focused on two main concepts. One is the knowledge of commonly used jargon in the dental profession and the second is to know the effect of this commonly used jargon on patient–doctor communication and treatment outcomes.

Materials and Methods

Study design and setting

We chose a random effect model for the meta-analysis since the study was heterogeneous in character. With the Sandelowski and Barroso approach, meta-synthesis was carried out to identify the high-frequency, mid-frequency, and rarely used jargon in dental profession. The data were analyzed using coding techniques.

This review followed the guidelines of Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) and applied for registration in PROSPERO and registered with ID CRD42021272555. The following research questions are based on the aim of this systematic review.

RQ1. What has been the recent research reported on the use of jargon in the dental profession?

RQ2. Are there any effects of jargon on doctor–patient communication and treatment outcomes?

Study participants and sampling
Inclusion criteria and exclusion criteria
The inclusion criteria for this systematic literature review were: research papers in English, original research studies, case reports, and systematic reviews related to the use of jargon among healthcare professions, papers enlisting the effect of jargon on doctor–patient interaction, and treatment outcomes. The following were the exclusion criteria for this systematic review: research papers not written in the English language, research studies that do not meet the research objectives of the review, editorial letters and opinions, short communications, technical notes, and mini-reviews.

Data collection tool and technique

A search strategy for this systematic review was followed by identifying research papers published during the time period of 2001–2022, that are pertinent to answer the research questions related to the objectives of the study. The strategy involved defining the search space related to the usage of jargon in healthcare professions and its effect on communication and treatment outcome measures.

Based on the availability of research articles and knowledge related to the subject, we developed a list set of keywords. By testing in search engines, we reduced the five keywords that were used in this systematic review. All the keywords related to three components, including the use of term jargon in healthcare professions, especially in the dental field, the effect on doctor–patient interaction upon the usage of jargon during hospital visits, and the effect on treatment outcomes due to the use of term jargon during the treatment phases.

The terms like jargon, medical/dental abbreviations, shorthand medical/dental technical terms, confused/strange/unintelligent/barbarous language/a hybrid language, and obscure and often pretentious language were used in the initial search.

Subsequently, this set of words was used as a query in databases, such as PubMed, Web of Science, and Scopus. This process resulted in a reduction of the core search parameters used to identify the key components related to jargon in healthcare professions.

After retrieving the articles, we then carefully chose qualified research papers for this systematic review. The terms used in the PubMed, Web of Science, and Scopus databases were as follows:

"jargon"[All Fields] OR ("abbreviations used in health profession"[All Fields] OR ("health sectors"[MeSH Terms] OR "health sectors"[All Fields] AND ("technical terms in health profession"[All Fields] OR "technical terms in health profession"[MeSH Terms] OR "jargon in dentistry"[MeSH Terms] AND ("jargon in dentistry"[MeSH Terms] OR "jargon in dentistry"[AllFields] OR "jargon in medicine"[All Fields] OR "jargon in medicine "[MeSH Terms] OR "jargon in medicine"[All Fields] AND(("hybrid language"[All Fields] AND (("2000/01/01"[PDAT]: "2020/12/31"[PDAT]) AND"humans"[MeSH Terms] AND English[lang]). The sequence of the search strategy is explained in a flowchart by following the PRISMA guidelines [Figure 1].

Cochrane risk of bias tool was used in this systematic review to assess for any risk. This risk assessment tool helped us to produce high-quality papers with reliable conclusions. The risk of bias in relevant articles was assessed by subjective judgment and classified into one of three levels based on the following cutoffs: high frequency (commonly used), mid-frequency, and jargon (rare words) commonly used in health professions based on the domains like sequence generation, allocation concealment, blinding of participants, blinding outcome, the incomplete outcome of data, and selective outcome reporting. The percentage of each judgment based on the different domains used for this systematic review was approximately 54.17% low risk, 30.83% unclear, and 15% of high risk of bias [Figures 2 and 3].

We conducted a study to determine how much jargon is used by dentists. The data table shows some variation in the frequency of jargon usage in the dental profession as high frequency, mid-frequency, and rarely usage. Ten studies that meet our inclusion criteria were included. For each frequency of jargon usage that was retrieved from the studies, such as high frequency, mid-frequency, and uncommon usage of jargon from the outcomes of random effect meta-analysis using the R meta package.

Ethical consideration
Institutional ethics committee waived reviewing this systematic review and meta-analysis. We performed a
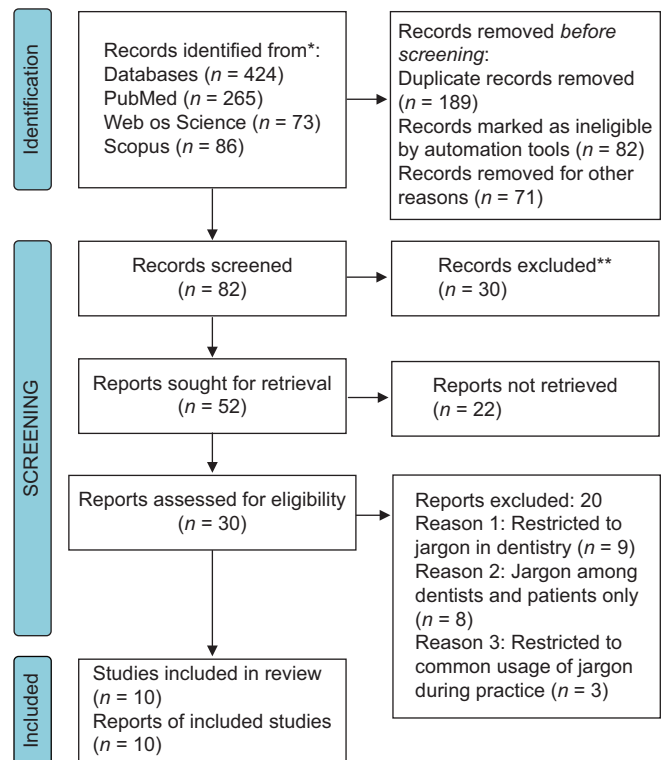
Figure 1: Demonstrates flow diagram of the study selection process as indicated by the PRISMA (Preferred Reporting Items for Systematic Review and Meta-Analysis)

meta-analysis following our registration in PROSPERO with ID CRD42021272555.

Results

To understand the frequency of use of jargon in healthcare professions, and its advantages and disadvantages usage at each stage of doctor–patient communication, the search was initiated for this systematic review.

All the articles identified were reviewed and checked for their inclusion after they met the objectives of this systematic review. Once the reports identified related to the term jargon in healthcare professions, especially in the dental field, the effect of jargon usage on doctor–patient communication and its effect on treatment outcomes due to the use of term jargon during the treatment phases, they were screened for this systematic review's objectives.

An initial search with the keywords yielded a total of 424 articles. Once reviewed based on the objectives of the systematic review, only 22 articles remained after initial screening. Only 20 articles were eligible, those were related to the criteria or objectives of this systematic review. Out of the eligible articles, only 10 articles in which comparative and systematic reviews related to jargon use and its effects in the dental profession were included. The included research papers and reviews are categorized based on their research objective and

research significance. The characteristics of the research papers included in this systematic review are shown in Table 1.
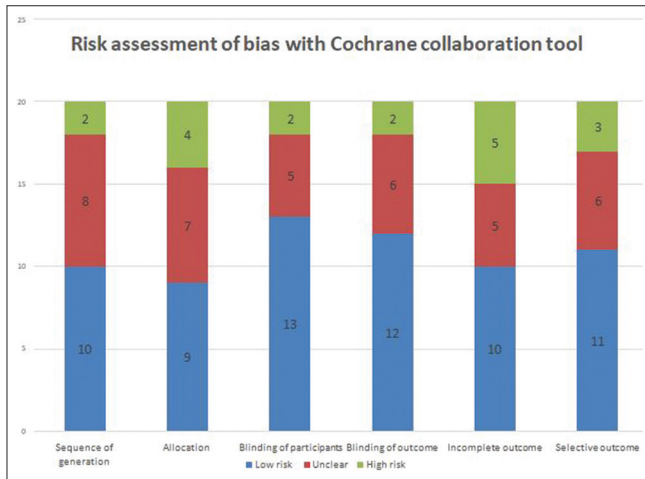

Figure 2: Describes the assessment of the risk of bias with the Cochrane collaboration tool

As can be seen from the results in Additional file 1, and in Figure 4, there is significant heterogeneity in the jargon variables and communication issues in the dental profession. The correlation ratio (COR) of frequency of jargon is 0.46 (0.34; 0.57), *P* value <0.0001, which indicates the presence of these issues.

We may also see the outcomes of the meta-analysis as a forest plot. A sample forest plot from the simulated analysis is given in Figure 4. The 10 studies (1–10 for high, mid, and rare frequencies) and their respective COR (95% CI) are visible from the forest plot. The effect size of each study is represented by the gray box (in this case, COR). The study is more heavily weighted as the box is larger (i.e., bigger sample size). The gray diamond shape shows the pooled COR of the ten studies.

As the gray diamond is away from the sides and has not crossed the vertical line COR = 0.46, it suggests relevance for the association. This can be verified by the *P* value of less than 0.0001 and the 95% confidence interval. We also

Table 1: The role of jargon in the health profession with concluding remarks

Reference	Title	Research method	Research significance
[1]	Babel babble: physicians' use of unclarified medical jargon with patients.	Questionnaire-based study	Physicians caring for patients with limited health literacy employ unclarified jargon during key clinical functions.
[2]	Medical communication: do our patients understand?	Cross-sectional survey	Medical terminology is often poorly understood, especially by young, urban, poorly educated patients. Emergency healthcare providers should remember that even commonly used medical terminology should be carefully explained to their patients.
[3]	Assessing the written communication skills of medical school graduates	Comparative clinical study	The relationship of patient note scores with other related ability measures and select candidate characteristics provides additional evidence to support the validity of the written exercise.
[4]	Jargon: A barrier in case history taking?—A cross-sectional survey among dental students and staff.	Cross-sectional questionnaire-based survey	This study showed widespread use of jargon/abbreviations in case history taking among the respondents. There is a lack of knowledge regarding standard medical abbreviations.
[5]	Automatic jargon identifier for scientists engaging with the public and science communication educators.	An analytic study	The De-jargonizer can help scientists identify problematic jargon when communicating science to non-experts
[11]	Dental student to patient communication analysis: a pilot study.	A pilot study	The results of this study showed three common errors that dental students made while dealing with patients: The consistent assumption of patient comprehension, the use of over technical jargon, and a lack of use of multi-mediated forms of communication to bridge communicative barriers.
[12]	Elucidating dental jargon	A review	Dentists speak a language of their own, which can be confusing to a veterinarian starting to practice dentistry. This article tries to clarify some of the commonly used terms referring to the oral cavity.
[13]	Research writing in dentistry	A textbook chapter	The chapter stated that slang, colloquialisms, and pseudo-scientific jargon should be avoided as much as possible. Repeated use of technical jargon tends to trivialize the subject matter.
[14]	Is jargon a deterrent to effective communication in dental practice? The budding dentists' outlook	Cross-sectional questionnaire-based survey	This study showed widespread use of jargon/abbreviations in case history taking among the respondents. More medical/dental schools, residency programs, and continuing education programs for practicing physicians need to include training in clinical communication skills to enhance health outcomes.
[15]	Health literacy in an adult dental research population: a pilot study	A pilot study	This study stated that technical terminology and jargon should be avoided or if used, it should be explained in plain, simple language.

see that $I^2 = 99\%$, has been discovered which shows strong heterogeneity. We also conducted prediction interval values, which are shown in the red line and indicate that, if anyone conducted a new study, the range would be between (−0.32 and 0.87) at a 95% confidence interval.

Figure 3: Demonstrates the percentage of each judgment based on the different domains used for this systematic review

Discussion

In specific, in health professional fields such as medicine and dentistry, the common use of jargon during communication with the patient at any stage of the patient's visit is frequently found.[11-16]

It is better to evaluate the common usage level of jargon and prevent strategies to its usage at certain levels during patient communication. Research has shown that patients sometimes cannot understand doctors' explanations and instructions, leading to unwanted complications.[17,18] To avoid unwanted complications, it is better to avoid usage of rarely used jargon or mid-frequency level words in health professions.[12]

This systematic review by Von Fraunhofer JA., on the role of jargon in doctor–patient interaction, aimed to provide its implications in medicine and dentistry.[13] The comprehensive data were based on (a) how common the jargon is used in medicine and dentistry (b) the effect of jargon used on patient–doctor communication (c) evaluating the role of jargon on treatment outcomes
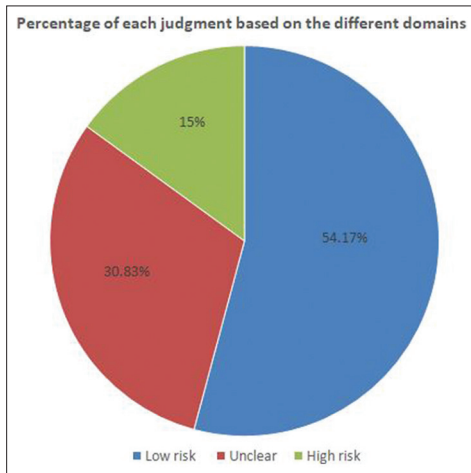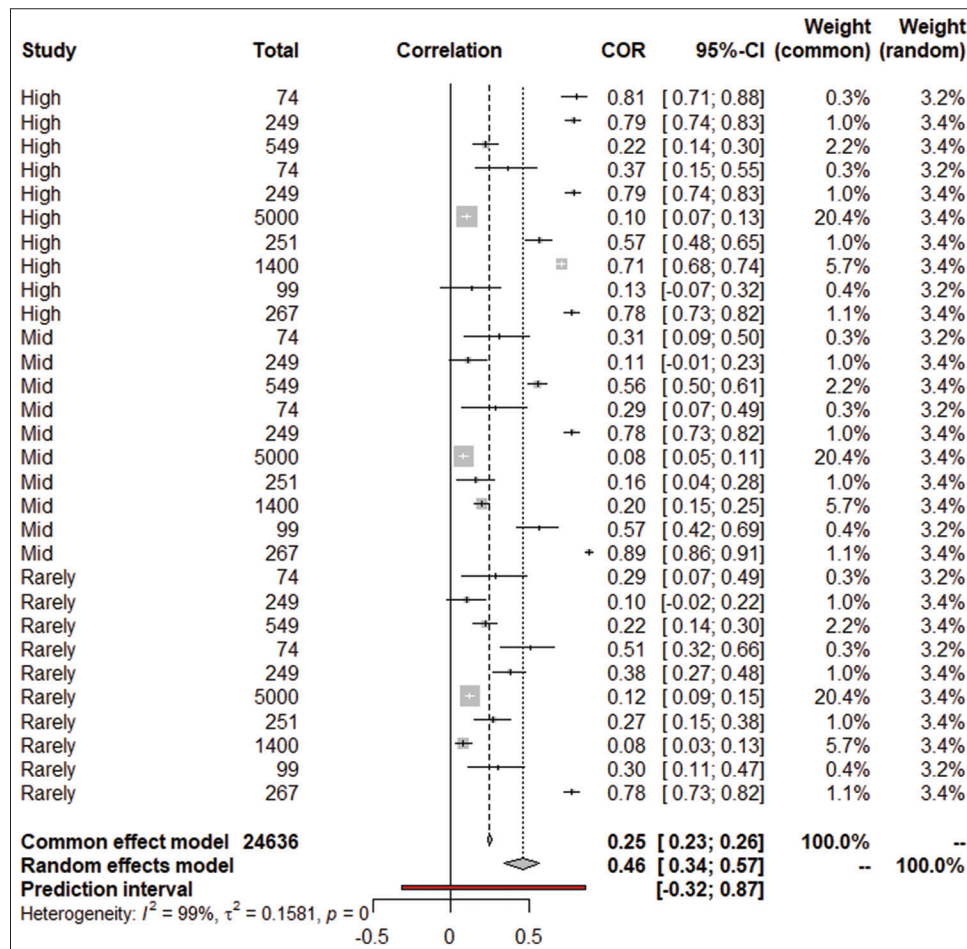

Figure 4: Common effect model and random effect model forest plot showing 1–10 studies high frequency, 1–10 studies mid-frequency, and 1–10 studies rare usage of jargon in dental profession

in both medical and dental fields.[19-21]In this section, the research papers which met the eligibility criteria of the systematic review were discussed according to their research objective, methodology, and research significance Table 1.

Evidence of how common the jargon used in medicine and dentistry

Castro *et al*. (2007) conducted a questionnaire-based study on physicians to know the use of unclarified medical jargon with diabetic patients. They had done a telephonic interview on 74 patients and coded unclarified jargon and checked for comprehension of diabetes-related jargon varied with context. Eighty-one percent of unclarified jargon, 31% of jargon while recommendations, and 29% while providing health education were observed through this study. This study stated that clinicians facing patients at key clinical levels used unclarified jargon.[1]

Lerner *et al*. (2000) in their cross-sectional study on medical communication determined the patient's understanding of common medical terms used by healthcare providers. A total of 249 patients were asked whether six pairs of terms had the same or different meanings and scored on the number of correct answers. Up to 79% of patients poorly understood the medical terminology, especially young, urban, and poorly educated patients.[2]

Boulet *et al*. (2004) conducted a comparative clinical study to assess the written communication skills of medical undergraduate students. Psychometric adequacy of patient note scores was investigated every year. The relationship of patient note scores with other related ability measures and select candidate characteristics provides additional evidence to support the validity of the written exercise.[3]

Subramaniam *et al*. (2017) conducted a study to assess the acceptance and use of jargon in case history taking among clinical dental students and dental teaching faculty members. A cross-sectional questionnaire-based survey was carried out, consisting of 15 questions, to assess the use of jargon among dental undergraduate students, house surgeons, postgraduate students, and teaching faculty. All the 549 respondents used jargon in case history taking. Approximately 22.4% of the respondents admitted that they always used jargon and 55.8% admitted using jargon only when there was a lack of time. This study showed the widespread use of jargon/abbreviations in case history taking in the dental profession.[4]

Rakedzon (2017) conducted a study to present the development and validation of the data produced by an up-to-date, scientist-friendly program for identifying jargon in popular written texts, based on a corpus of over 90 million words published on the BBC site during the years 2012 ± 2015. This study stated that De-jargonizer can help scientists identify problematic jargon when communicating science to non-experts.[5]

Bowles *et al*. (2020) conducted a pilot study to analyze dental student conversations about patient treatment plans for native English and English as second language patients. The study recruited four dental students who spoke English as their first language and four patients, two with English as their native language and two with English as their second language from Oregon Health & Science University School of Dentistry. Three communication errors like consistent assumption of patient comprehension, the use of technical jargon, and a lack of use of multi-mediated forms of communication to bridge communicative barriers were found among the dental students dealing with English as second language patients.[11]

Sharma *et al*. (2018) conducted a study to assess the use of jargon and its acceptance in clinical history taking among dental students and interns in a dental teaching hospital. A cross-sectional questionnaire-based survey was carried out on 267 individuals and the study showed widespread use of jargon/abbreviations in case history taking among the respondents. In conclusion, the study stated that training has to be needed for effective clinical communication skills to enhance health outcomes.[14]

Jackson *et al*. (2008) investigated to gather data concerning the level of health literacy in adults who frequently volunteer for clinical research programs. In the convenience sample of 99 adults, health literacy was measured using the Short Test of Functional Health Literacy in Adults. This investigation concluded that technical terminology and jargon should be avoided or if used, should be explained in plain, simple language.[15]

From the viewpoints of patients and healthcare professionals, Charosaei *et al*. conducted a study to identify efficient techniques for the implementation of PCC (patient-centered care). A qualitative study was carried out between 2019 and 2020 in one of the university hospitals of Abadan University of Medical Sciences utilizing the traditional content analysis method. Following data analysis, three major categories and seven subcategories were derived. Healthcare managers and administrators can use the study's findings to support high-quality care for cardiac care unit patients and increase patient satisfaction, according to the practical tactics used in this study.[22]

Hashemian *et al*. conducted a study to determine the educational objectives and requirements of

clinical informationists (CIs). In order to do this, a scoping review that followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses recommendations was carried out. The final review included 38 studies out of a total of 1026 that were extracted. As a result of this study, 18 goals in the cognitive, affective, and psychomotor domains were identified. The findings of this study indicated that they might serve as the foundation for further research into the CI competences in order to develop a more accurate and thorough curriculum based on these educational requirements.[23]

To record the language used by library personnel and patrons when referring to health sciences information sources, Fenske *et al*. performed a study. The survey produced 624 distinct jargon occurrences, of which 54% were acronyms or initialisms. Jargon was shown to be a useful tool for inter-professional communication, supporting the role of the librarian as a communication facilitator even in the face of automated information systems.[24]

Limitations and recommendation

There is no mention of how to stop jargon use among healthcare professionals in various healthcare sectors.

Continuous dental education and motivation programs have to be conducted by the governing bodies to educate the patients regarding high-frequency used jargon by the dentists and to enlighten the dentists not to use the mid-frequency and rarely used jargon.

Conclusion

The medical or dental terminology should be clearly explained in simple, plain language to the patients. To attain the desired results of patient–doctor interaction in health sectors, it is advised to conduct continuing education programs for health professionals to train them in clinical communication skills that further enhance health outcomes.

Acknowledgement

Financial support and sponsorship

Conflicts of interest

There are no conflicts of interest.

References

1. Castro CM, Wilson C, Wang F, Schillinger D. Babel babble: Physicians' use of unclarified medical jargon with patients. Am J Health Behav 2007;31(Suppl 1):S85–95.
2. Lerner EB, Jehle DV, Janicke DM, Moscati RM. Medical communication: Do our patients understand? Am J Emerg Med 2000;18:764–6.
3. Boulet JR, Rebbecchi TA, Denton EC, McKinley DW, Whelan GP. Assessing the written communication skills of medical school graduates. Adv Health Sci Educ Theory Pract 2004;9:47–60.
4. Subramaniam R, Sanjeev R, Kuruvilla S, Joy MT, Muralikrishnan B, Paul J. Jargon: A barrier in case history taking?-A cross-sectional survey among dental students and staff. Dent Res J (Isfahan) 2017;14:203–8.
5. Rakedzon T, Segev E, Chapnik N, Yosef R, Baram-Tsabari A. Automatic jargon identifier for scientists engaging with the public and science communication educators. PLoS One 2017;12:e0181742.
6. Bruine de Bruin W, Bostrom A. Assessing what to address in science communication. Proc Natl Acad Sci U S A 2013;110(Suppl 3):14062–8.
7. Plaxco KW. The art of writing science. Protein Sci 2010;19:2261–6.
8. Kuehne LM, Olden JD. Opinion: Lay summaries needed to enhance science communication. Proc Natl Acad Sci U S A. 2015;112:3585–6.
9. Szabó R, Farkas G, Keszeg M, Eördegh G, Buzás N, Antal M. [The role of the "compromise effect" in dental treatment choice. A pilot study in 676 Hungarian volunteers]. Orv Hetil 2019;160:1503–9.
10. Kranz AM, Pahel BT, Rozier RG. Oral literacy demand of preventive dental visits in a pediatric medical office: A pilot study. Pediatr Dent 2013;35:E68–74.
11. Bowles K, Sehgal HS, Santelmann L, Pham EP, Kohli R. Dental student to patient communication analysis: A pilot study. Health Commun 2020;35:10–7.
12. Legendre L. Elucidating dental jargon. Can Vet J 1995;36:390, 392.
13. Von Fraunhofer JA. Research writing in dentistry. John Wiley & Sons; 2010 Feb 9.
14. Sharma N, Patnaik S. Is jargon deterrent to effective communication in dental practice? the budding dentists' outlook. J Indian Assoc Public Health Dent 2018;16:48.
15. Jackson RD, Eckert GJ. Health literacy in an adult dental research population: A pilot study. J Public Health Dent 2008;68:196–200.
16. Shah A. How well do patients understand dental jargon? Br Dent J 2021;231:30.
17. McKenzie CT. Instructor and dental student perceptions of clinical communication skills via structured assessments. J Dent Educ 2016;80:563–8.
18. Alexander RE. Readability of published dental educational materials. J Am Dent Assoc 2000;131:937–42.
19. Graham S, Brookey J. Do patients understand? Perm J 2008;12:67–9.
20. Aziz S, Shamim M, Aziz MF, Avais P. The impact of Texting/SMS language on academic writing of students-what do we need to panic about? Elixir Linguist Transl 2013;55:12884-90.
21. Mahmoud SS. The effect of using English SMS on KAU foundation year students' speaking and writing performance. Am Int J Soc Sci 2013;2:13-22.
22. Charosaei F, Rostami S, Esmaeili M, Molavynejad S, Vanaki Z. Effective strategies for implementing patient-centered care in cardiac care unit: An opportunity for change. J EducHealth Promot 2021;10:380.
23. Hashemian M, Rahimi A, Yamani N, Adibi P, Zare-Farashbandi F. Clinical informationist educational needs and goals: A scoping review. J Educ Health Promot 2020;9:193.24. Fenske RE, Fortney LM. The use of jargon in medical school libraries. Bull Med Libr Assoc 1986;74:12–5.
24. Fenske RE, Fortney LM. The use of jargon in medical school libraries. Bulletin of the Medical Library Association 1986;74:12.