



Effect of Clear Communication Training on Medical Residents’ Use of Jargon in Written Messages to Patients

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Introduction

Background

- Medical jargon—technical terminology used by healthcare providers—can pose an obstacle in advancing effective patient care, especially for those with low health literacy.¹
- Clear communication training can reduce medical residents’ use of jargon in spoken encounters.²
- To our knowledge, no studies have examined physicians’ use of jargon in personalized written messages to patients.

Objective

- Evaluate the impact of a brief training for medical residents on the use of unexplained jargon in, and grade level readability of, personalized written messages sent to patients through a secure patient portal.

Methods

Participants & Design

- Retrospective cohort study of nine 1st-year OHSU family medicine residents who received mandatory training on clear written communication in February 2024.
- The training consisted of an 80-minute written communication workshop, within a 4-part series on health literacy and clear communication.
- Compared jargon and readability in written messages sent by residents to patients through a secure patient portal (MyChart) during 3 months before and 3 months after training.

Jargon & readability

- We defined jargon broadly as any term with unique or specific significane in a health or health care context.
- Two researchers independently reviewed and identified medical jargon in each written message based on a published 7-category medical jargon taxonomy.³
- Differences resolved through consensus discussion.
- Flesch-Kincaid Grade Level for messages ≥ 100 words assessed with Microsoft Word version 2512.

Analysis

- Analysis restricted to 4 jargon categories: technical, acronyms/abbreviations, medical vernacular, medicalized English (Table 1).³
- Mean jargon rates and readability compared using t-tests at significance p ≥ .05.

Table 1. Jargon taxonomy*		
Jargon category	Description	Example(s)
Technical terminology	Anatomy, disease names, drug names, job titles, microbes, symptom names, tests and procedures, therapies	Pancreas, hypertension, levothyroxine, gastroenterology, herpes simplex virus, palpitations, colonoscopy, iron infusion
Acronyms, abbreviations	Acronyms for technical and non-technical terms, abbreviations and shorthand, symbols	COPD, CT scan, UTI, GI, a fib, cath lab, ortho, mg, g, x
Medical vernacular	Categories of technical terms, descriptions of symptoms, syndromes health-related phenomena, and neologisms	Antibiotics, electrolytes, imaging, chronic, blood pressure, acid reflux, mental health, side effects, over-the-counters
Medicalized English	Words with different meanings inside and outside of health-related contexts	Admitted, negative, stool, stable

*Modified from Pitt and Hendrickson (2020)

Results

Table 2. Residents’ written messages before and after communication training

	pre-training	post-training	total	p-value
number of residents who wrote messages	9	9	9	--
number of messages written	210	211	421	--
mean (SD) number written messages per resident	23.33 (18.42)	23.44 (15.63)	23.39 (16.57)	0.9892
number of words written (total)	18192	18562	36754	--
mean (SD) wordcount per message	86.63 (81.30)	87.97 (75.49)	87.3 (78.35)	0.8607
number of written messages with ≥ 100 words	51	57	108	--
mean (SD) grade level readability* of messages ≥ 100 words	9.120 (2.889)	9.0509 (2.554)	9.0833 (2.704)	0.8958

*Readability estimated using the Flesch-Kincaid Grade Level readability tool in Microsoft Word

Table 3. Jargon in residents’ written messages before and after communication training

		pre-training	post-training	total	p-value
technical terminology	number of technical terminology used	481	483	964	--
	number of unique* technical terminology used	414	418	832	--
	number of undefined unique* technical terminology used	399	386	785	--
	mean number of undefined unique* technical terminology per message	1.9000	1.8294	1.8646	0.7495
	mean unique* undefined technical terminology jargon rate	0.0219	0.0208	0.0214	0.2908
acronyms/ abbreviations	number of acronyms/abbreviations used	324	256	580	--
	number of unique* acronyms/abbreviations used	270	220	490	--
	number of undefined unique* acronyms/abbreviations used	260	211	471	--
	mean number of undefined unique* acronyms/abbreviations per message	1.2381	1.0000	1.1188	0.1487
	mean unique* undefined acronyms/abbreviation jargon rate	0.0143	0.0114	0.0128	0.0657
medical vernacular	number of medical vernacular used	579	541	1120	--
	number of unique* medical vernacular used	515	469	984	--
	number of undefined unique* medical vernacular used	512	465	977	--
	mean number of undefined unique* medical vernacular per message	2.4381	2.2038	2.3207	0.2675
	mean unique* undefined medical vernacular jargon rate	0.0281	0.0251	0.0266	0.3619
medicalized English	number of medicalized English used	151	131	282	--
	number of unique* medicalized English used	131	118	249	--
	number of undefined unique* medicalized English used	131	116	247	--
	mean number of undefined unique* medicalized English per message	0.6238	0.5498	0.5867	0.4617
	mean unique* undefined medicalized English jargon rate	0.0072	0.0062	0.0067	0.6002
overall jargon	number of jargon terms used (total)	1535	1411	2946	--
	number of unique* jargon terms used	1330	1225	2555	--
	number of undefined unique* jargon terms used	1302	1178	2480	--
	mean number of jargon terms used per message	6.2000	5.5829	5.8907	0.1175
	mean unique* undefined jargon rate	0.0716	0.0635	0.0675	0.045**

*Unique terms: if a term appears more than once in the same message it is counted as a single usage.

**Statistically significant, p < 0.05

†Mean number of jargon terms used per message = (number of undefined unique jargon terms used) / (number of messages written)

‡Mean unique undefined jargon rate = (number of undefined unique jargon terms used) / (number of words written)

Discussion & Conclusions

Significance

- Participation in an 80-minute required training on clear written communication was associated with an 12.5% reduction in use of total undefined jargon in written communication with patients (7.2 words per 100 pre- vs. 6.3 words per 100 post-training; p=0.045) over a 3-month follow-up period (Table 3).
- This is the first study to quantify physicians’ use of jargon in personalized written communication with patients, and the first to demonstrate an effective intervention for reducing such jargon.
- A major strength of this study is that residents did not know their messages would be scrutinized at the time of writing, thus eliminating the risk of performance bias. The observed changes represents the development of plain language “habits.”
- Grade level readability was unchanged at 9.1 before and after training, significantly higher than the recommended target of 5th-6th-grade.⁴

Limitations & Considerations

- We did not have a separate control group, so it is possible that some other factor, such as time, produced the observed decrease in jargon.
- We used a more inclusive definition of jargon than some others have.⁵ The rates of jargon we observed may not be comparable to other studies, as our data may include more “lower-level” jargon (e.g., clinic, medication).
- We only analyzed messages written by residents and do not know if any jargon terms had been introduced earlier by patients, thus not needing to be defined.

Conclusions

- Participation in an 80-minute skill-building workshop on clear communication was associated with a significant decrease in the use of undefined jargon in written communication with patients by resident physicians over a three-month period.

Future Directions

- Develop a valid method for distinguishing between “higher-level”⁶ and “lower-level” jargon terms.
- Determine if additional training would produce a larger decrease in jargon use.

References

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