University of Central Florida STARS

Honors Undergraduate Theses

UCF Theses and Dissertations

2023

Examining Patient-Physician Communication as a Form of Mutual Persuasion using the Conversational Argument Coding Scheme

Pritam Kanthala University of Central Florida

Part of the Health Communication Commons Find similar works at: https://stars.library.ucf.edu/honorstheses University of Central Florida Libraries http://library.ucf.edu

This Open Access is brought to you for free and open access by the UCF Theses and Dissertations at STARS. It has been accepted for inclusion in Honors Undergraduate Theses by an authorized administrator of STARS. For more information, please contact STARS@ucf.edu.

Recommended Citation

Kanthala, Pritam, "Examining Patient-Physician Communication as a Form of Mutual Persuasion using the Conversational Argument Coding Scheme" (2023). *Honors Undergraduate Theses*. 1368. https://stars.library.ucf.edu/honorstheses/1368

EXAMINING PATIENT-PHYSICIAN COMMUNICATION AS A FORM OF MUTUAL PERSUASION USING THE CONVERSATIONAL ARGUMENT CODING SCHEME

by

Pritam Kanthala

A thesis submitted in partial fulfillment of the requirements for the Honors Undergraduate Thesis Program for Biomedical Sciences in the Nicholson School of Communication and Media and in the Burnett Honors College at the University of Central Florida Orlando, Florida

Spring Term, 2023

Thesis Chair: Ann Miller, Ph.D.

ABSTRACT

Communication between the patient and the physician in clinical encounters has traditionally been considered a passive interaction on the side of the patient, whereby the healthcare provider examines the patient's condition and circumstances, evaluates the situation, and prescribes a certain treatment plan or procedural solution that will heal the patient's ailment. However, recent research and fundamental communications understanding strongly emphasizes that effective communication is a two-way endeavor that ideally should involve input and insight from both sides of the conversation. Treating all clinical interactions as a one-way didactic experience where a provider usually goes through a checklist of commonalities would seem to not approach the same level of patient satisfaction and understanding as active mutual participation employing common conversational and argumentative techniques by both sides of the patient-physician dyad. The Conversational Argument Coding Scheme, presented by Canary et al., was implemented in a slightly modified format to code transcripts of clinical encounters in a college setting. It was demonstrated that clinical encounters employing more forms of conversational argumentation did not statistically correlate to increased ratings of patient satisfaction/knowledge, but did not harm these ratings in a significant manner. This could be due to the limitation that the study was conducted with a patient population consisting entirely of enrolled college students on campus, implying a greater degree of health literacy and education level that highlights that a presence or lack of teach-back or other mutual participation would not significantly affect patient satisfaction/knowledge in the clinical encounter. Further research needs to be conducted to prove this correlation, but as of now, it would be in good practice and in good faith for healthcare providers to employ teach-back or to encourage mutual participation and conversation in their clinical encounters.

ACKNOWLEDGEMENTS

I would like to first thank my thesis chair, Dr. Ann Miller, for giving me the opportunity to pursue this research opportunity and the Honors Undergraduate Thesis distinction, for guiding me as an undergraduate student, and for being patient and understanding in times that I had to spend time away from the project.

I would also like to thank the other professor on my thesis committee, Dr. Harry Weger, for providing a unique perspective on my ideas and a framework by which to analyze the clinical transcripts. Without Dr. Weger, this project would not have been possible.

Lastly, I want to thank my friends and family who have supported me on this seemingly endless academic journey through the pandemic and all the tough times that we had to endure. Through all the stress, anxiety, sleepless nights, and times I wanted to throw in the towel, you have always been there for me in times I needed you the most.

Thank you.

TABLE OF CONTENTS

ABSTRACT	ii
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
INTRODUCTION	1
METHODS	9
RESULTS	12
DISCUSSION	
APPENDIX A: MODIFIIED CACS CRITERIA	
REFERENCES	25

INTRODUCTION

Healthy and effective communication between the patient and the physician has been proven to significantly improve quality of treatment and accuracy of diagnoses, cut delays in treatment and diagnosis, promote trust between patients and healthcare providers, and foster positive and beneficial relationships in clinical settings. However, the quality of communication can be curtailed by strong emotions from those afflicted by illness, personal and/or cultural values that can interfere with optimal healthcare procedure, and struggles with health literacy in the patient populace. In the face of this myriad of limiting factors, physicians must be wellprepared to pinpoint and respond to their patients' specific needs in a professional manner, even when the needs of the patients may not be entirely clear.

Although the correlation between effective patient-provider communication and positive healthcare outcomes has been firmly established, there are varying beliefs among healthcare providers and communications professionals about what types of communication are deemed successful or how we can assess, encourage, or teach them. In accordance with this variation, there is an abundance of research utilizing diverse instrumentation and schema in order to gauge the effectiveness and quality of many different styles of patient-physician communication. These studies encompass several related fields of importance including linguistics, communications, and cognitive psychology in order to best portray and analyze communication in healthcare.

Medical school equips future physicians with the knowledge to clinically assess and diagnose patients who present with many different complaints, often employing standardized checklists (such as a patient satisfaction survey checklist or a mental health risk assessment checklist) to analyze ailments and care for their patients. In some cases, the interpersonal quality of healthcare may become subservient to simply satisfying the checklist in an almost robotic fashion. However, the challenges of healthy communication are arguably more complex than routine, checklist-type analysis can capture. Strong patient-provider communication requires consideration of the unique circumstances of each individual patient, and adaptive dexterity in handling each case in a manner that puts the patient at ease and works towards an optimal course of diagnosis/treatment. This essential adaptability can break the mold of traditional communication patterns that medical practitioners may have commonly used in training, and poor implementation of this can lead to many of the problems that we witness while studying communication in healthcare. Hard sciences such as biochemistry and anatomy are vital in providing physicians with sound clinical readings, diagnostic accuracy, and appropriate treatment procedures. In conjunction with these fundamentals of medical science, healthy and effective communication protocol with patients should also be focused on in the practice of quality healthcare, and should be studied/practiced properly in the education of medical students.

Literature regarding patient-physician communication indicates several key areas of conceptual understanding that are critical for maximally effective communication in healthcare. These areas include: physician clarity and the importance of being intelligible, active patient participation, epistemic access and authority, affiliative/affective language and building emotional bonds, establishing role/identity, and managing interactional/relational aspects of communication (Forsey et al., 2021). Of these key areas, the ones of interest to this research are physician clarity and active patient participation.

Physician clarity and the importance of using clear, concise language in medical practice cannot be understated. This area includes using language that is appropriate for the circumstances as well as clearly explanatory of any medical jargon so patients leave with a solid

2

grasp of their diagnosis and how the physician will proceed with treatment. The degree of clarity afforded to each patient depends on the unique background of the patient and their level of health literacy. It is important to be careful in this regard, as using ambiguous language (words such as should, could, or might) can cause an elevation in anxiety or unease in patients, while being too repetitive and explicit can cause patients to feel patronized or uncomfortable. Furthermore, physicians often tend to use euphemisms in order to more comfortably deliver alarming or distressing news to patients. However, this practice can cause patients to be wrongfully optimistic about their prognosis, and potentially cause distrust or unclear conversation in the future. In addition, some key words or phrases that doctors use when describing medical phenomena or treatment procedures may come off as ambiguous to patients and can have multiple meanings in different scenarios. The meanings of certain words can increasingly be morphed based on the distinct cultural background of the patient (as compared to the physician) and the way they speak or understand dialogue. Complex medical terminology and scientific concepts may be unavoidable if patients are to be given proper diagnoses and prognoses. However, these terms and concepts must not be glossed over by physicians, and instead be properly explained to patients.

Active patient participation is another key aspect of healthy patient-physician communication. Clarity of language from the physician side is closely interwoven with this concept, because utilizing clear, concise language and ensuring patient understanding allows them to take a more active role in their treatment and participate in discussing their symptoms and their unique treatment plan/procedure. This idea of active patient participation is often emphasized in contemporary Western healthcare. Active participation is shown to significantly improve healthcare outcomes and patient satisfaction in most clinical settings. Practicing physicians must carefully choose their style of communication and the content of their descriptions, as this can substantially shape the engagement and participation of their patients. For instance, if a physician explicitly describes that several options are available in the pursuit of treatment, the patient is less likely to passively (and often reluctantly) accept the single recommendation of the physician. In contrast, they may actively consider each option and inquire about the benefits and drawbacks of each one. This not only serves to improve health literacy in patients involved, but also confers more effective patient-physician communication and enhances patient satisfaction. On the other hand, improper use of language can frame patients as passive recipients of healthcare, and leave them feeling disempowered and dejected when faced with their conditions. For example, when physicians use questions that imply submissive and passive responses (such as "Do you understand?"), patients may often feel disempowered or disillusioned with their healthcare, and take a passive backseat in the treatment of their condition.

Street (2017) has argued that two concepts are critical to studying and understanding physician-patient communication. First, healthcare communication should not be thought of as something an individual communicator does. That is, the outcome of communication between a patient and a physician does not depend solely on what the physician does. Rather, it should be thought of as something that interactants jointly achieve. In structured analysis of patient-physician communication, researchers should be careful not to rely too heavily on measures that are highly clinician-centric. Second, measures of patient-centered communication should focus not only on interactants "judgment" of the interaction, but also on direct observation of precisely what both interactant parties did — "behavior". The preponderance of research on physician-patient communication is primarily based on patient self-reports about the medical

encounter. This is unsurprising considering that surveying patients is considerably less expensive and time-consuming than recording and analyzing interaction, but it is often not sufficient to understand the nuances of how communication transpires between interactants.

More specifically, Freytag and Street argue that active patient participation can be conceptualized as mutual persuasion. Traditionally, healthcare has been viewed as a one-way street, where the physician provides a diagnosis and a treatment plan for the conditions that the patient is facing, and the patient passively listens and follows what they are being told. However, recent research by Street et al. suggests that effective, collaborative relationships are established through active patient participation in clinical settings. Active patient behavior can include asking specific questions, being assertive, and expressing important concerns. Physicians should then respond to these behaviors by developing partnership and employing emotionally supportive discussion. These active communication tropes, especially when utilized by patients, prompt higher-quality responses from physicians and allow both sides of the communication duo to exercise their mutual influence or persuasive power. Therefore, the empowerment of active patient-centered communication substantiates Street's distinct concept of mutual persuasion, which allows for patients and physicians to practice mutual influence, significantly improve overall quality of care, and offer an advantageous alternative to traditional, passive methods of clinical communication.

Although much of the research regarding patient-provider communication has been based on patient reports of communication (what Street refers to as "judgment"), one well-established tool that researchers use for observing actual physician-patient interaction (what Street refers to as "behavior") is the Roter Interaction Analysis System (RIAS). The RIAS is a robust method of coding and interpreting transcripts of dialogue in medical settings, and has been widely used in

5

order to gather and interpret patient-provider communication transcripts. The system has been proven to "provide reasonable depth, sensitivity, and breadth while maintaining practicality, functional specificity, flexibility, reliability, and predictive validity to a variety of patient and provider outcomes," (Roter, Larson 2002). The RIAS considers both the task-focused domain of physician communication (providing knowledge and understanding of the condition that the patient is experiencing) and the socio-emotional domain of physician communication (expressions of concern, optimism, empathy, laughter, and simple chit-chat). Many studies and applications have shown the RIAS to be particularly flexible and adaptable to many unique medical contexts over various fields that may incur the use of the system. For instance, flexibility and adaptability of the RIAS is apparent via its use in studying/optimizing verbal communication quality in oncology, obstetrics and gynecology, end of life discussion, baby care, and delivery of routine, periodic care to patients with chronic conditions such as asthma or diabetes. The system is also flexible in that it can code and analyze multiple speakers in a medical context, utilize subcategories in the RIAS framework, and allow for further elaboration via coder notes and concise content summaries.

Due to all of these promising facets of the RIAS, it is not difficult to see why it is one of the most prominent, preferred methods in coding and analyzing patient-physician communication. However, the limitations of the RIAS arise in that it is limited in its analysis of both sides of the patient-provider interaction. In particular, the idea of the two-way argumentative dynamic of mutual persuasion proposed by Street is not readily applicable to its framework and would not yield ideal coding records and results. Although the RIAS does allow researchers to count certain amounts of patient statements, it does not have the capacity to categorize specific types of patient remarks or follow specific argument trajectories that may likely present themselves over the course of the dialogue. In order to consider patient-provider interaction via mutual persuasion, a different coding scheme would yield more decisive results.

The Conversational Argument Coding Scheme (CACS), proposed by Canary et al., is capable of coding argumentation moves or patterns from both sides of the patient-physician dyad. The CACS has its foundation in the theory of structuration, which posits that all social actions are governed by the delicate interaction of societal structure/convention (the norm) and the agency (the capacity) of individuals to pursue whatever power and resources they wish to in order to fulfill their potential. With the premise of this foundation in structuration, the coding scheme has been developed for application to real-world two-way interactions. The CACS analyzes interaction by identifying arguable points (assertion, proposition, elaboration, amplification, or justification), convergence markers (agreement or acknowledgement), prompters (objection, challenge, or response), delimiters (frame, forestall/secure, forestall/remove), and non-arguable points (statements without an argumentative function or process talk). The clarity and utility of the CACS has been refined through application to interactions in multiple contexts, with the result that the CACS "has been refined through a combination of "top-down" and "bottom-up" strategies. While the theory of structuration provides a general conceptual framework, the coding scheme itself is more specific to empirical applications," (Canary et al.).

This categorical classification of medical dialogue via the CACS allows us to analyze patient-provider communication as a form of mutual persuasion, the concept Freytag and Street (2022) have advocated for. The focus of the CACS on reciprocal conversation could prove to be useful in understanding the way communicative behaviors of physicians may hinge upon the approach that patients take to the interaction. To this day, The CACS has not been utilized for strictly clinical settings, so this research could provide valuable insight into how useful the CACS can be in analyzing communication in medical contexts. In addition, the analysis of final results may allow us to suggest certain argumentation patterns or communication methodologies that should be used more often or less often in order to optimize the overall quality of healthcare outcomes, satisfaction, and communication.

Therefore, in this study, I pose three key research questions:

RQ1: How appropriate/effective is the CACS at coding medical encounters and analyzing clinical transcripts?

RQ2: How does the use of conversational argumentation, as defined by the CACS, differ between clinical encounters with teach-back and those without teach-back?

RQ3: How are different levels of conversational argumentation associated with patient satisfaction, perception of provider clarity, and post-appointment knowledge?

METHODS

Intro: In order to answer the posed research questions, the study examines audio recordings of patient-provider interactions in the primary care unit of the university's Student Health Services (SHS). Data collection took place between November 2019 and February 2020. Ethical approval was obtained from the universal institutional review board.

Recruitment: All healthcare providers at SHS who were not solely involved in behavioral health or women's health were asked to participate in the patient-provider communication study. Providers were not told specifically what the study was investigating in order to avoid ascertainment bias. Recruitment took place via email and in-person conversation with the SHS assistant director of medical health and administration. Twelve out of fifteen providers agreed to participate over the two semesters of data collection. These providers include five primary care physicians, two sports medicine physicians, and five physician assistants.

Patient appointment was the unit of analysis for data collection and interpretation. When patients call SHS in order to schedule an appointment, the type of appointment is recorded on the schedule. Appointments involving sensitive and confidential topics such as sexual assault/victim services, substance use disorders, mental/behavioral health, and STIs were not included in the sample. This decision was made by SHS personnel who were concerned with the recording of sensitive patient information regarding these topics. Furthermore, women's health and behavioral health appointments are longer than typical primary care appointments, and are often structured differently. Therefore, limiting data collection to primary care appointments enabled us to ensure format consistency in the analysis of appointments.

9

Procedure: When patients arrived for their appointments, one of the nurses involved in the study explained the purpose of the research to the patients and that the session would be recorded. These nurses emphasized that the student's medical condition was not the primary focus, but rather the communication between the provider and the patient. Informed consent and HIPAA release forms were obtained, completed, and sent to the SHS privacy and security officer. Patients under the age of 18 were not recruited. Only data-collecting personnel, the privacy officer, and the assistant director had access to the file linking patient personal identifiers with unique ID numbers.

Nurses recorded the ID number for each appointment on a digital recording device and placed the active recording device in the exam room before the patient entered. The recording device then took record of the entire medical encounter, and was turned off only when the provider left the room. The MP3 files of the recordings of each patient appointment were uploaded to a folder locked behind a secure firewall and devices were wiped after each upload. Of the 92 patients who initially agreed to participate, the audio files of five were not used for analysis because they were inaudible, permission was withdrawn by the patient partway, or the discussion turned to sensitive and excluded topics that could no longer be recorded. The remaining 87 recordings were manually transcribed on site in a separate, dedicated room by research assistants. Audio files stayed within SHS premises, and identifying information was deleted before transcripts were taken from behind the firewall to be analyzed. The coding method used in the analysis of these transcripts was the CACS, as outlined in the literature review.

10

Patient Post-encounter Questionnaire: To reduce burden on patients, all variables were measured using single-item measures. The first three items of the patient post-encounter questionnaire assessed patient's understanding, satisfaction, and self-efficacy. Patients responded on Likert-type items from 1 to 5, with 1 = not at all to 5 = very much. A fourth yes/no question asked if the provider had asked the patient to explain the information back to them (that is, whether they had implemented teach-back). Finally, nurses asked patients to describe what the provider said was wrong with them, what they should do about it, and why it was important. Referring to the answers on a corresponding provider questionnaire, nurses rated patient responses as "very inaccurate," "somewhat accurate," or "very accurate."

Instrumentation: The transcripts of the clinical conversations will be punctuated into thought turns (Hatfield & Weider-Hatfield 1978), which reference changes in thoughts and not necessarily speaker turns. The unit of analysis for this particular study will be the patientphysician communication dyad. The transcripts taken from the above data collection procedure will be coded following a modified system for coding conversational argument presented by Canary et al. in the CACS manual. Each thought turn will be designated as an arguable (assertion, proposition, elaboration/justification, response), a convergence marker (agreement, acknowledgement), a prompter (objection, challenge), a delimiter (frame, forestall), or a nonarguable. At the beginning of the coding process, transcripts will be randomly selected and separately coded in order to estimate intercoder reliability. Any disagreements in coding use will be adequately discussed and resolved. The criteria used to determine the correct type of each thought turn is defined in Appendix A.

RESULTS

The randomly selected sample of procured clinical transcripts was analyzed using the methodology described above involving a modified system of the CACS manual delineating each category of thought turn (arguable, convergence marker, prompter, delimiter, non-arguable). Each clinical encounter also had corresponding ratings of provider explanation, patient satisfaction, confidence, and accuracy of the patient's knowledge of diagnosis/treatment/reason of treatment. Descriptive statistics of variables of interest in RQ2 and RQ3 are presented in Table 1.

Table 1. Descriptive statistics of variables of interest

	Yes	No	
Teach-back present	21	22	
	n	М	SD
Proportion of arguables	43	.58	.08
Proportion of non-arguables	43	.21	.07
Proportion of delimiters	43	.05	.02
Satisfaction*	43	4.93	.34
Confidence*	43	4.91	.29
Accuracy, knowledge of diagnosis**	43	2.02	.16
Accuracy, knowledge of treatment**	43	2.81	.45
Accuracy, knowledge of reason for treatment**	42	2.76	.58

*Scale of 1 to 5; **Scale of 1 to 3

RQ2 asked how the use of conversational argumentation, as defined by the CACS, would differ between clinical encounters with teach-back and those without teach-back. Prior to investigating the research question, all sub-categories for types of statements were collapsed into single overarching categories of arguables, non-arguables, convergence markers, prompters, and delimiters. The variables of interest to this study—arguables, non-arguables, and delimiters— were then transformed into proportions out of the total number of utterances coded for each encounter.

To test the hypothesis, a *t*-test was used with presence or absence of teach-back as the independent variable and proportions of total comments that were arguables, non-arguables, and delimiters as the dependent variables. Levene's test indicated that equal variance could not be assumed for the proportion of the delimiters variable. Results are presented in Table 2.

	М	SD	df	t	р
Proportion of arguables					
Teach-back	.64	.04	41	10.70	<.001
No teach-back	.51	.04			
Proportion of non-arguables					
Teach-back	.15	.03	41	-14.28	<.001
No teach-back	.28	.03			
Proportion of delimiters					
Teach-back	.04	.01	39.89	-8.21	<.001
No teach-back	.06	.01			

Table 2. Comparison of encounters with and without teach-back in terms of use of conversational argumentation.

As indicated in the table, encounters in which teach-back was used had significantly higher use of arguables and lower use of non-arguables and delimiters than encounters in which teach-back was not used. RQ3 asked how different levels of conversational argumentation would be associated with patient satisfaction, perception of provider clarity, and post-appointment knowledge. This was examined using bi-variate correlations. Results are presented in Table 3. No statistically significant relationships emerged between use of conversational argumentation and patient outcome variables.

Table 3. Correlations between use of conversational argumentation and patient post-visit outcome variables

	1	2	3	4	5	6	7	8	9
1.Arguables	1.00	96**	74**	.05	13	.20	.13	.02	01
2.Non-arguables		1.00	.72**	03	.15	16	11	06	.03
3.Delimiters			1.00	09	.16	24	08	.12	.14
4.Provider explained well				1.00	05	07	.03	.10	.16
5.Satisfaction					1.00	07	.03	12	09
6.Confidence						1.00	.05	18	.05
7.Knowledge of diagnosis							1.00	.09	.06
8.Knowledge of treatment								1.00	.29
9.Knowledge of reason for treatment									1.00

** p <.01

DISCUSSION

In consideration of the data that was collected using the CACS system, it is safe to say that the CACS was effective at coding the provided medical encounters. The slightly modified system of the CACS manual was able to clearly quantify the involvement of each category of thought turn in the patient-physician encounters that were analyzed. Each class of arguable point was directly involved in significant quantifiable measure in all of the recorded clinical transcripts. Furthermore, the classes of arguable points that exemplify elevated levels of conversational argumentation (assertion, proposition, elaboration/justification, response) were consistently higher in clinical encounters with teach-back relative to those without teach-back. Teach-back is a communication technique implemented in medical settings to improve patient understanding and retention by means of asking patients to explain, in their own words, the information described to them by the healthcare provider. The key difference in clinical encounters with teach-back and those without teach-back is that by utilizing teach-back, patients are actively engaged in the communication process and are encouraged to ask questions, voice concerns or ideas, and clarify any uncertainties. These patterns of conversation strongly correlate to the concept of mutual persuasion in the patient-physician dyad as originally substantiated by Freytag and Street. The communication techniques and concerns/questions presented by the patient as part of their explanation of the recommended treatment process and their personal experience with the condition can provide the physician with a more intricate understanding of the patient's situation, and perhaps sway the physician's final decision or diagnosis in a manner that better benefits the unique circumstances of the patient involved. This characteristic backand-forth conversation embodied by teach-back notably lends itself to the concept of mutual persuasion discussed prior, and highlights how considering the clinical encounter as a form of

mutual persuasion where both sides of the patient-physician dyad can provide valuable input and insight to the patient's condition and their circumstances can be a solid net positive on overall healthcare outcomes and patient satisfaction.

As part of this research, the quantitative data show that corresponding ratings of patient satisfaction, perception of provider clarity, perception of sufficiency of information, selfefficacy, and post-appointment knowledge remained high among clinical encounters that displayed relatively higher argumentation (primarily characterized by teach-back). However, these central ratings did not noticeably change when moving from the transcripts of relatively higher argumentation to those with relatively lower argumentation (primarily lacking teachback). This constancy in ratings could be due to a few critical reasons. First, when considering the patient population that this study involved, it is important to note that the patients were all enrolled undergraduate or graduate students in a college campus setting. This patient community automatically confers a greater level of education and health literacy among the patient population that naturally is not generalizable to the broad public, where these communication techniques of teach-back and mutual persuasion could prove to be significantly more valuable. This principal reason will be discussed further in the limitations section toward the end of the discussion. Second, it is entirely possible that the use of mutual argumentation in the clinical setting is not as beneficial to healthcare outcomes and patient satisfaction/knowledge as initially anticipated. While the data can validly be interpreted in this manner, it is also important to note that these central ratings remain very high among transcripts involving relatively higher levels of argumentation, thus proving that the use of mutual persuasion techniques does not result in any drawbacks in or actively harm patient satisfaction/knowledge. Therefore, it can be concluded that encouraging mutual participation and consequent conversational argumentation in the patientphysician encounter can only have neutral or beneficial results on the interaction, and is statistically unlikely to harm outcomes of the interaction in any way. Thus, it would be good practice and in good faith for healthcare providers to encourage active mutual participation/argumentation or employ elements of teach-back in their clinical encounters with patients in order to maintain positive healthcare outcomes and healthy patient satisfaction/knowledge.

Some important limitations were identified in this study that need to be considered when drawing conclusions from the data that were analyzed. The primary limitation of this study is that the patient population consisted solely of enrolled students at a college campus. As mentioned previously, the naturally higher education and literacy level, along with the limited age group, creates an environment where results may not be readily generalizable to the public. Similarly, the patient population of only college students implies homogeneity, wherein college students tend to be of similar socioeconomic status and lifestyle choices, which may not be entirely applicable to broader populations of differing socioeconomic positions or lifestyle characteristics. In addition, college students tend to trend healthier with less debilitating conditions or chronic illnesses. In cases such as these that are so prevalent in the general public, the use of teach-back and intricate mutual argumentation could prove to be significantly more valuable in improving the patient experience and healthcare outcomes. The last distinct limitation of the study is the limited number of transcripts that were completely coded for analysis. More individuals dedicated to coding would allow for the processing and analysis of a higher number of clinical encounters, which inherently affords greater applicability and generalizability of the results drawn from the data.

20

Further research confirming a positive correlation between increased levels of mutual participation/argumentation and improved patient satisfaction/knowledge, especially with a more diverse population, would be instrumental in proving the benefits of considering patient-physician communication as a form of mutual persuasion. Implementing these communicative techniques can have lasting positive effects on healthcare outcomes and patient well-being.

APPENDIX A: MODIFIIED CACS CRITERIA

Coding Scheme:

Arguables:

1. Assertion: Statements of fact or opinion.

2. Propositions: Usually direct questions.

3. Elaborations/Amplifications/Justifications: Any statement that supports or further elaborates an assertion (but not statements that contextualize an assertion). These can be deductions or inferences. "You don't have high cholesterol so I'm not prescribing a statin." "You aren't likely to be pregnant because you aren't sexually active." "I'm going to prescribe you a statin (assertion)/ because you have high blood cholesterol and statins are used for lowering blood pressure."/ code as elaboration/justification

4. Responses: These are similar to elaborations but occur in defense of a message that has met with disagreement.

Example:

I think you should give me a beta blocker. (assertion)

Why? Don't you have high blood pressure? (challenge)

My professor said beta blockers can help reduce anxiety. (response).

Convergence Markers:

5. Agreement

6. Acknowledgement

Prompters:

7. Objections: Denies the truth of a statement.

8. Challenges: Similar to propositions but are in the context of a disagreement. "How can I take penicillin if I'm lactose intolerant?" Use these only if there is clear disagreement implied or a problem with some statement.

Delimiters:

9. Frames: Statements that provide context for or qualify arguables. E.g., "I was at home when I started feeling sick" or "I was on my way to school when a car hit me." Other statements that are not direct elaborations on an assertion. In "I was throwing up yesterday," the "yesterday" is part of the statement that is sort of incidental. It provides context, but it is part of the entire thought about the symptom, the statement is an assertion or perhaps an elaboration.

But if it is an answer to a question about a symptom or health issue, code it as a frame. "When did you get sick?" "Yesterday" is a frame because it is an answer to a question that provides context or qualifies the statement about having a sore throat.

Patient: "I have a sore throat."

Practitioner: When did it start?"

Patient: "Yesterday"

10. Forestall secure or remove: Let's not talk about that. I don't need to know that. I don't want to hear it. Let's talk about something else. Etc.

Nonarguables: Code as 11

Process talk which includes things like the doctor giving directions for taking medication, discussions about making a new appointment, who to make the new appointment with, etc.

Incomplete thought turn that is either interrupted or is withdrawn and restarted, e.g., "Yes, I had these... uh, I went to the doctor when I was in Houston."

Thought turns unrelated to task such as, "I like your shirt"

REFERENCES

- Bot AG, Vranceanu AM, Herndon JH, Ring DC. Correspondence of patient word choice with psychologic factors in patients with upper extremity illness. Clin Orthop Relat Res. 2012; 470:3180–3186
- Canary, D. J., Brossmann, J. E., & Weger, H. (1995). Toward a theory of minimally rational argument: Analyses of episode-specific effects of argument structures. Communication Monographs, 62(3), 183–212. https://doi.org/10.1080/03637759509376357
- Canary, D. J. (1992). Manual for coding conversational arguments. Unpublished manuscript, Penn State University
- 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):22–25
- Daniel J. Canary & David R. Seibold (2010) Origins and Development of the Conversational Argument Coding Scheme, Communication Methods and Measures, 4:1-2, 7-26, DOI: 10.1080/19312451003680459
- Forsey, Jacquelin; Ng, Stella PhD; Rowland, Paula PhD; Freeman, Risa MD, PhD; Li, Connie;
 Woods, Nicole N. PhD. The Basic Science of Patient–Physician Communication: A Critical
 Scoping Review, Academic Medicine: November 2021 Volume 96 Issue 11S p S109S118 DOI: 10.1097/ACM.00000000004323
- Harry Weger Jr. & Daniel J. Canary (2010) Conversational Argument in Close Relationships: A Case for Studying Argument Sequences, Communication Methods and Measures, 4:1-2, 65-87, DOI: 10.1080/19312451003680541
- Miller KL. Patient centered care: A path to better health outcomes through engagement and activation. NeuroRehabilitation. 2016 Oct 14;39(4):465-470. doi: 10.3233/NRE-161378.PMID: 27689606.

- Peter AU, Scherr KA, Fagerlin A. Empowerment failure: How shortcomings in physician communication unwittingly undermine patient autonomy. Am J Bioeth. 2017; 17:31–39
- Pires CM, Cavaco AM. Communication between health professionals and patients: review of studies using the RIAS (Roter Interaction Analysis System) method. Rev Assoc Med Bras (1992). 2014 Mar-Apr;60(2):156-72. doi: 10.1590/1806-9282.60.02.014. PMID: 24919004.
- Roter D, Larson S. The Roter interaction analysis system (RIAS): utility and flexibility for analysis of medical interactions. Patient Educ Couns. 2002 Apr;46(4):243-51. doi: 10.1016/s0738-3991(02)00012-5. PMID: 11932123.
- Roter D. The enduring and evolving nature of the patient-physician relationship. Patient Educ Couns. 2000; 39:5–15
- Seibold, D., & Weger, H. (2017). Chapter 10: The Conversational Argument Coding Scheme. In C. VanLear, & D. Canary Researching interactive communication behavior (pp. 159-173).
 SAGE Publications, Inc, <u>https://dx.doi.org/10.4135/9781506349169.n10</u>
- Street RL Jr, Makoul G, Arora NK, Epstein RM. How does communication heal? Pathways linking clinician-patient communication to health outcomes. Patient Educ Couns. 2009 Mar;74(3):295-301. doi: 10.1016/j.pec.2008.11.015. Epub 2009 Jan 15. PMID: 19150199.
- Street RL Jr. The many "Disguises" of patient-centered communication: Problems of conceptualization and measurement. Patient Educ Couns. 2017 Nov;100(11):2131-2134. doi: 10.1016/j.pec.2017.05.008. Epub 2017 May 5. PMID: 28619273.
- Thompson, T. L., & Harrington, N. G. (2022). Chapter 12: Mutual Persuasion as Patient-Centered Communication. In The Routledge Handbook of Health Communication. essay, Routledge, Taylor & Francis Group.
- Weinfurt KP, Sulmasy DP, Schulman KA, Meropol NJ. Patient expectations of benefit from phase I clinical trials: Linguistic considerations in diagnosing a therapeutic misconception. Theor Med Bioeth. 2003; 24:329–344