Perceptions of Quality of Communication in Family Interactions in Neurocritical Care

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Abstract

Objective: To investigate concordance in perceptions of communication among participants in family discussions and assess the importance of different domains of communication in a neurocritical care unit. Methods: Prospective observational study conducted in a neurocritical care unit. Our study involved family discussions regarding plan of care for patients admitted to the unit. All participants completed a survey. The first 4 questions rated understanding of the discussion and general satisfaction; the remaining questions were open-ended to assess quality of communication by the physician leading the discussion. Responses were scored and compared among participants using a Likert scale. A difference of < 1 in scores among participants was rated as concordance, while > 2 was designated as discordance. All open-ended responses were classified into six domains. Results: We observed 35 family discussions. Questions 1-3 yielded 99 cross-comparisons per question (total of 297 compared responses). Most responses were either "Strongly Agree" or "Agree"; with "Neutral" or "Disagree" responses being more prevalent in Question 2. Overall concordance of responses between participants was 88%. Education was the most frequently cited domain of communication in response to open-ended questions. Among family and neutral observers, empathy was frequently listed, while providers more often listed family engagement. Conclusion: Overall, satisfaction was high among providers, families, and the observer regarding quality of communication during family discussions in the unit. Perceptual differences emerged over whether this communication impacted healthcare decision-making during that encounter.

INTRODUCTION

Effective communication between healthcare providers and patients/families is essential for patient-centered care and is pivotal to patient/family decision-making, particularly in Neurocritical care, because involvement of multispecialty providers can yield inconsistent messages.[1-3] Our study sought to assess differences in perceptions about communication between providers and patients' families in a Neurocritical care unit.

METHODS

Participant Recruitment and Data Collection

The study protocol was approved by the local Institutional Review Board. Data was collected in a Neurocritical care unit at a tertiary-level academic medical center. A neutral observer observed discussions between providers and patients' families. The observer then discussed the study with families or surrogate

1

decision-makers and obtained informed consent. Each member of the discussion – provider, family, nurse, and observer – completed a questionnaire to evaluate the quality of communication (Table 1).

We screened clinical encounters between July - August 2015 and June - July 2016 where providers interacted with families to deliver medical information, reviewed plan of care, or addressed goals of care. There were no junior new trainees rotating in the ICU or participating in family discussions hence this time was selected. Only encounters involving English-speaking families of patients age 18 or older were included. We excluded encounters where providers or families expressed discomfort, the observer was absent, or families were grieving. We also excluded encounters if a provider refused to complete surveys, or a patient was deceased.

Survey Instrument and Variables Collected

The questionnaire administered was constructed after review of literature (Table 1) .[1,4-7] Each participant ranked aspects of communication during the encounter on a Likert scale of agreement. Questions 1-3 were answered by all participants. Question 4a was answered by providers, Question 4b was answered only by families. Questions 5-9 were open-ended and used to identify domains of communication that affected participants' perception of quality of communication.

Analysis

For each encounter, numerical values for each response were compared among respondents (Table 1 and Figure 1). The degree of difference (DOD) was calculated to capture concordance e.g. Question 3 states: "The family understands the treatment options explained to them." If the family's response was "Disagree," a value of 4 was coded. If the physician's response was "Strongly Agree," a value of 1 was coded, and the DOD was three. A DOD [?] one was considered concordance, while a DOD [?] two was considered discordance (Table 2).

Each pair of responses for each of the first three questions was coded as concordant or discordant. A repeated measures logistic regression model was fit with terms for the subject, the pair of responders (e.g., family and provider, nurse and observer, etc.) and the question, allowing a comparison of the rates of concordance between the questions, and between the pairs of responders, while adjusting for the correlation among responses.

Additionally, data from Questions 1-3 were reanalyzed using a three-point scale where "Strongly Agree" and "Agree" was classified as "Agree"; "Neutral" remained the same; and "Disagree" and "Strongly Disagree" were classified as "Disagree".

Finally, responses to open-ended questions were divided into 6 domains, initially using the Bayer Institute for Health Care Communication E4 Model – Education, Empathy, Engagement, and Enlistment.[8] Each comment was analyzed by a blinded scorer using these domains. Post-hoc analysis revealed several comments addressing Speech Mechanics and Settings; these domains were added, resulting in six domains for the analysis. (Figure 2)

Data Availability Statement

Anonymized data will be shared by request from any qualified investigator.

RESULTS

We examined 35 encounters; we excluded 13 encounters based on our criteria. Collectively, 77 surveys were completed: 22 by providers (18 led by a neurointensivist care physician, four were led by resident or advance practice provider), 22 by the observer, 22 by families, and 11 by nurses. Mean values are reported in Table 1 and responses in each category in Figure 1 and Table 3.

Only 28 out of 231 responses to the first three questions (12%) were Neutral, Disagree, or Strongly Disagree. Traditional measures of inter-rater agreement (Krippendorf's Alpha, Intra-Class Coefficients, and Cronbach's Alpha) are not well defined with so little dispersion. For this reason, we defined concordance using the degree

2

of difference defined above (Table 2). Analysis of Questions 1-3 yielded 99 cross-comparisons per question and total 297 responses. Two hundred and sixty-one responses demonstrated concordance and 36 showed discordance (88% concordance, 12% discordance). Most responses for Questions 1 and 3 were in the "Strongly Agree" or "Agree" category. Concordance between all groups was high, particularly for Questions 1 and 3 (96 and 94%, respectively), suggesting that all parties agreed on quality of the communication. Question 2 on whether communication impacted healthcare decisions had a lower rate of overall concordance (72%) than the other two questions ($p < 0.01$). This discordance was greatest when comparing family/provider and family/nurse responses, although there were no statistically significant differences between pairs of responders. Analysis of exact concordance on the condensed three-point scare yielded similar results (Table 4).

The discordance among participants for Question 1 did not affect respondents' general satisfaction with provider's communication during the encounter (Table 3). For encounters with complete concordance, 73% of respondents strongly agreed that they were satisfied with the provider's communication. Among encounters with at least one discordant crossmatch, that number was 70%. Even for encounters where three or more cross-matched responses were discordant, participants answered "Strongly Agree" for Question 1 regarding satisfaction with the encounter 68% of the time.

Question 4a assessed the provider's comfort with discussing the patient's prognosis with the family. All 22 providers reported that they strongly agreed or agreed (n=16 and 6, respectively) that they were comfortable discussing the prognosis with families. Question 4b assessed the family's general satisfaction with the care the patient received. All respondents either strongly agreed or agreed (n=19 and 3, respectively) that they were satisfied with the quality of care.

Questions 5-9 yielded 148 responses; six responses were recorded as none or not sure. Some respondents provided multiple remarks (159 positive, 17 negative), yielding 176 keywords classified into six domains. Common remarks involved educational content (46%), empathy (21%), and engagement (19%) (Figure 2). The observer, families, and nurses primarily focused on educational content and empathy (86%, 84%, and 73%, respectively). Providers commented on either educational content or empathy in 49% of remarks. Providers and the observer noted the "physical setting of the meeting" in 14% of remarks. Empathy was the most frequently cited domain by families (31%) and the observer (30%).

DISCUSSION

Our project shows a survey-based approach to investigate concordance in perceptions of communication among participants in family discussions and identify domains of communication in a Neurocritical care setting. Most participants in our cohort felt that treatment options were adequately conveyed and were satisfied with the communication, although the impact on healthcare decisions was reported lower than expected. Possible reasons could have been include preexisting religious beliefs, or prior plan of care discussion.

Education was the most frequently mentioned domain of communication in open-ended questions among all groups. Engagement and enlistment were not frequently mentioned by families. Remarks from families and the observer noted empathy which was notably absent in provider remarks. These findings led us to create an education module implemented as a part of our curriculum highlighting ways to improve communication. Given the extremely positive results of the pre-module surveys, post-module assessment was not felt to provide contributory information to boost initiatives to improve communication.

Our limitations included small sample size, restriction to English-speaking participants, inability to rule out selection bias or Hawthorne effect among respondents and high degree of competency presumed from attending physicians directing most conversations. It is possible that families with discomfort or conflict during these discussions refused consent for the study creating self-selection of satisfied respondents. Furthermore, conversations in family lounge areas mentioning the study may have affected expectations of family satisfaction and concordance.

This study did not assess other factors that influence patient decision-making (e.g. family religiosity, edu-

cational level of decision-makers, socioeconomic status). Such factors may underlie discordant provider and family perceptions of how provider communications influenced family decision-making.

Traditional summary measures of agreement like Krippendorf's or Cronbach's alpha, and intra-class coefficients were also considered. Krippendorf's alpha calculated on the original data showed poor to moderate agreement beyond chance; the discrepancy between a high percent agreement and low Krippendorf's alpha may indicate that the method performs best with responses that are more diverse.

Overall, our study showed high satisfaction among providers, families, and the observer regarding quality of communication during family discussions in the Neurocritical care unit.

Our study identified the variability in perceptions amongst various domains of communication. This was useful for designing and testing educational interventions involving family communication.

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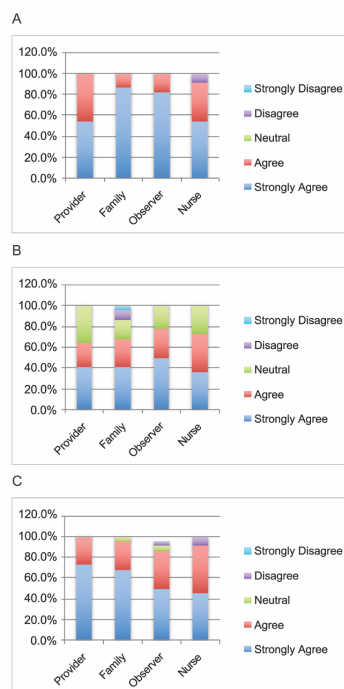8. Keller VF, Carroll JG. A new model for physician-patient communication. Pat Educ Couns 1994;23:131-40.

Acknowledgements

Figure Legends

Figure 1. Figure 1a shows the responses to Q1 ("I am generally satisfied with the provider's communication with the family"). Figure 1b shows the responses to Q2 (The conversation impacted the family's healthcare decisions). Figure 1c shows the responses to Q3 (The family understands treatment options explained by the provider).

Figure 2. Figure 2a shows the total percentage of open-ended remarks made in each domain. Figure 2b shows the percentage of remarks made in each domain categorized by participant group. Figure 2c shows the descriptive remarks by participants in survey with examples of domain assignment.

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