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# What We Say Matters: A Survey of Anesthesia Providers' Knowledge and Beliefs

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Abstract

Pain is a serious concern and fear of patients. Due to the Joint Commission's introduction of standards to address undertreatment of pain, it is now a focus of healthcare providers. Emerging research is focused on language in assessing pain. This study investigated the knowledge gap among anesthesia providers on positive language and pain assessment. The study objectives were to conduct a survey of Illinois Association of Nurse Anesthetists (IANA) members' current knowledge and beliefs on Positive Language and the Nocebo Effect related to patient outcomes, and to educate anesthesia providers with an evidence-based fact sheet. The fact sheet and Qualtrics survey were created by the authors and distributed via email. Anonymity was maintained and consent was implied by completion of the survey. Data was analyzed with IBM SPSS Statistics. Key findings included presence of a knowledge gap, increased scores after reading the fact sheet, and a difference in baseline knowledge between practice settings as evidenced by an H statistic of 10.457, df=2 and a p value of 0.005. This study is the first to report anesthesia providers' knowledge toward Positive Language and the Nocebo Effect and may lead the way for the creation of a comfort scale.

Key words: positive language, negative language, nocebo effect, opioid crisis

## Introduction

Patients requiring anesthesia are vulnerable, so what words are used, and how they are said, matters.[1] Healthcare providers assess pain in patients and can affect pain perception with certain types of language. No previous studies have determined how Positive Language affects patient-reported pain outcomes, but research supports the hypothesis that Negative Language correlates directly with increased reports of pain.[2,5] A study examining anesthesia providers' knowledge and beliefs of Positive Language in pain assessment would elucidate an understanding of the current role Positive Language plays in practice and could illuminate strategies to increase its use.

Positive Language is a powerful tool healthcare providers use, often subconsciously, to improve patient outcomes by decreasing patients' perceived level of pain. It encompasses words and phrases associated with a pleasant connotation. It can be as simple as asking about a patients' comfort level instead of pain. Negative Language can incite the nocebo effect and increase patient reports of pain and anxiety.[2] Negative Language is associated with unpleasant emotional content, even though the provider may have good intentions.[1] Examples of Negative Language include phrases such as "sting and a burn," or simply the use of the word "pain" with medical procedures. While having pure intentions, using Negative Language to warn patients about potentially painful or uncomfortable stimuli increases said level of discomfort.[2]

A review of current literature begins with exploring the presence of the nocebo effect in patient-provider interactions. The nocebo effect occurs when negative expectations produce a detrimental effect, which is a self-fulfilling prophecy of negative expectations.[2] After randomizing patients presenting for scheduled cesarean section into two groups, placebo and nocebo, a lidocaine skin wheal was injected before neuraxial anesthesia placement. The nocebo

group was told, “You are going to feel a big sting and burn in your back now, like a big bee sting; this is the worst part of the procedure.” On the other hand, the placebo group was told, “We are going to inject the local anesthetic that will numb the area where we are going to do the epidural/spinal anesthesia and you will be comfortable during the procedure.”[2] The participants in the nocebo group reported significantly higher pain scores than those in the placebo group ($p<0.001$).[2] Practitioners commonly warn patients about an anticipated uncomfortable procedure. This triggers a nocebo response, prompting patients to both anticipate and report more pain than when positive language is used.

Assessing pain is a necessary form of communication in clinical practice, however providers must be cognizant of jargon that elicits the nocebo effect. Communication is a contributing factor to patient experience, and many patients have anxiety about procedures such as placement of an intravenous catheter. A randomized trial studied 101 patients before elective surgery to determine the effect of communication on perceived pain before intravenous cannulation.[3] Patients assigned to a “sting” (S) group were told “I am going to apply the tourniquet and insert the needle in a few moments. It is a sharp scratch and it may sting a little”, whereas patients assigned to the “no sting” (NS) group were told “I am going to apply the tourniquet on the arm. As I do this many people find the arm becomes heavy, numb and tingly. This allows the drip to be placed more comfortably.”[3] After receiving different verbal warnings, it was reported that zero participants in the NS group vocalized pain, and 12% of participants in the S group spontaneously vocalized pain during IV insertion. Use of negative language (sting) as a warning before a perceived painful procedure led to increased verbalizations of discomfort.[3]

Negative stimuli or language not only elicit negative experiences but induce physiological changes as well. Functional MRI (fMRI) can be used to examine brain activation

related to expected pain and experienced pain. Pain was induced by a thermal stimulator with varying degrees; subjects were told the thermal stimulator was at various temperatures and then touched by it.[4] At one point, subjects were told the thermal stimulator was at a higher degree than it was, to distinguish what effect it had on brain activation. Ten healthy individuals participated, and it was found that as expected pain increased, so did activation of the thalamus, insula, prefrontal cortex, and anterior cingulate cortex. Conversely, when expected pain was decreased, regardless of the actual temperature of the stimulator, subjective pain decreased, as well as decreased activation of brain regions.[4] Here, modulation of pain by expectation activated cerebral cortical areas.

In addition to the nocebo effect, use of negative language can elicit a negative patient experience. A study of 300 women after cesarean section was randomized into two groups and assessed for either pain or comfort.[5] The women in group P (pain) were asked "Do you have any pain?" Whereas the women in group C (comfort) were asked: "Are you comfortable?". Women were more likely to report pain when directly asked. Women in group C reported more comfort, less pain, and had lesser requests for additional analgesia.[5] This result was corroborated by the findings in a study that interviewed patients post-anesthesia with a numerical rating pain scale or a comfort rating scale. More pain was reported in the group that was assessed with the pain scale versus the comfort scale.[6] Research consistently demonstrates that negative words and language correlates with negative outcomes or increased pain. Utilizing positive words, such as comfort, decreases reports of pain.

Research in this arena has drawbacks, limitations and ethical concerns. A review of previous studies recognizes the limitations involved in nocebo research due to ethical constraints.[7] By influencing patient's expectations about a drug's actions, therapeutic outcomes

can be altered in opposite directions due to complex psychological factors about perception of pain and responses to analgesic treatments.[7] There are no known studies to date that focus on the use of positive language for anesthesia providers, and only one article was found to offer sample language for anesthetists. The perceived knowledge gap exists in the communication skills of the anesthetist. Communication with patients is an important contributor to patient satisfaction, anxiety, and comfort, yet anesthetists frequently communicate with patients in ways research has considered suboptimal.[8] Essential communication skills are not taught in training programs and, unfortunately, anesthesia literature offers little guidance and few suggestions for education and development of effective positive communication skills. Anesthetists employ both conscious and subconscious communication and the dichotomy of healthcare providers' language influences patient feelings and experiences more than realized.

Assessing baseline knowledge of these concepts was the premise for the research study. Certified Registered Nurse Anesthetists (CRNAs) are present throughout the entire perioperative course, having the potential to be influential forces on patients and their comfort levels. Providers are well intentioned when warning patients about perceived discomforts, but unintended Negative Language has detrimental effects on patients' pain and anxiety. Assessing current baseline knowledge of CRNAs regarding Positive and Negative Language, as well as the Nocebo Effect, can allow recognition of the knowledge deficit that persists in this area.

The overall goal of the study was to assess current use and understanding of Positive Language by anesthesia providers as there is a deficient amount of literature that currently investigates Positive Language, the Nocebo Effect, and potential barriers to implementation. The following clinical questions were answered during this research study: What are anesthesia providers' knowledge and beliefs on Positive Language and patient's perceptions of pain? And

What are anesthesia providers' knowledge and beliefs towards incorporating the use of Positive Language and phrases into their practice?

## Materials & Methods

Survey methodology was used to examine anesthesia providers' knowledge and perspectives on the use of positive language in patient interactions. The developed survey consisted of seventeen questions in a Likert-type scale format about anesthetists' prior knowledge of positive language and the nocebo effect related to patients. Before the survey, a fact sheet was provided (Figure 1) which explained the topic and included sample phrases to implement into practice. The fact sheet included information supported by the literature that went under extensive review for content validity by a panel of five experts in the field.

The sample population included practicing CRNAs and nurse anesthesia trainees in Illinois, as it was distributed through the Illinois Association of Nurse Anesthetists (IANA). Inclusion criteria for survey participation included: English-speaking (as the survey was written in English), IANA membership, legally permitted to provide anesthesia in the state of Illinois either independently or under the supervision of an anesthesia provider, and those directly communicating with awake patients. Exclusion criteria included: non-English speaking anesthesia providers, anesthesia providers not members of the IANA, and anesthesia providers not currently in practice.

A total of 1,795 possible study participants received the survey via email, with the ability to respond from work location or the privacy of their home or mobile device. The initial recruitment email contained an attached information sheet and was sent to ensure study participation was completely voluntary and anonymous. This information sheet clearly informed the IANA member that participation was voluntary, and consent was implied through completion

of the Qualtrics survey. Researchers did not have access to potential participants' email addresses, as the IANA Executive Director distributed the recruitment email and survey, further adding to anonymity and confidentiality of the participants.

Qualtrics was utilized to create the survey, further securing anonymity. Qualtrics does not track IP addresses, and eliminates participant email addresses from being discovered, further decreasing the risk of bias. The Qualtrics survey assessed participant knowledge and beliefs on Positive Language and its relationship to patient outcomes. In order to create reliable and credible results, the survey was sent out twice to the target population, two weeks apart. This timing allowed two exposures of the project, with the survey available for one month in total.

No physical or psychological risks were associated with this project. Completed surveys were anonymous, confidential, and completely voluntary. The benefit of participation included improving patient care and outcomes through evidence-based learning on language as well as self-awareness of the types of language currently used in practice. Potential participants were informed of the study purpose, as well as the right to withdraw at any point during the survey, without penalty. Furthermore, no specifically identifying questions were asked that would suggest a specific, known person was participating in the research study. Collaborative institutional training initiative (CITI) was completed by the researchers and ensured human subject protections.

## Results

Approval from DePaul University's IRB included recruitment of 1,795 possible participants. The survey was distributed to 1,795 IANA members. One hundred twenty-one members accessed the survey resulting in an access rate of 6.7%. Fourteen responses were excluded due to incomplete data. One hundred seven survey responses were complete, a

response rate of 6%. Reliability of survey responses was based on completed surveys from one hundred and seven participants.

The study's participants were IANA members across the state, with 15% of the participants being students/trainees. Overall, 13.1% had been in practice one to three years, 6.5% four to six years, 12.1% seven to ten years, 14% eleven to fifteen years, and 8.4% sixteen to twenty years. For years in practice as a CRNA, the highest percentage of participants (30.8%) have been in practice greater than twenty years (Table 1). Less than 1% indicated that their highest level of education was an Associate's degree (Table 2). Those with a Bachelor's degree made up 20.8% of the participants, while 50% had obtained Master's degrees and 28.3% held a doctorate (DNP/DNAP, EdD, Ph.D.). The majority of participants (72%) were female, and 28% were male. More than half (53.2%) were between the ages of 30-49, 21.5% of respondents were between 60-69, and less than 1% were 70 years of age or older (Table 3). Practice setting varied considerably among study participants with 45.8% of participants working in an urban setting, 32.7% in a suburban setting, 15.0% in a rural setting, and 6.5% of participants in a setting that was neither urban, suburban, or rural (Table 4). Survey results were coded according to Likert Scale responses, ranging from 1 to 4 (no neutral option). A numerical value of 1 corresponded to a deficient knowledge of the positive language before reading the fact sheet, and a numerical value of 4 reflected a greater knowledge; a higher Likert score reflected a higher level of knowledge on positive language.

The survey was developed to measure anesthesia providers' knowledge of positive language and consisted of 10 questions regarding knowledge of positive language. Questions 6 to 10 were reflective of participants' knowledge of positive language before reading the fact sheet, and questions 11 to 15 were their knowledge after reading the fact sheet. The mean score before

reading the fact sheet was 2.76, while the mean score after reading the fact sheet was 3.39 (Table 5). Cronbach's alpha was calculated to test the reliability of the items of the questionnaire in delivering consistent results. Cronbach's alpha for responses before reading the fact sheet was 0.784, and after reading the fact sheet was 0.794. A Cronbach's alpha coefficient between 0.65 and 0.8 accurately measures reliability.[9]

Question 16, which identified potential barriers, was manually interpreted. The barrier chosen 100% of the time, if chosen at all, was resistance from colleagues. After a Kruskal-Wallis H test was performed, pairwise comparisons were performed using Dunn's procedure with a Bonferroni correction for multiple comparisons. A p-value less than 0.05 indicated a statistically significant difference between pre and post fact sheet knowledge. The null hypothesis for the study was that a knowledge deficit did not exist. Adjusted p-values were presented and the post hoc analysis revealed statistically significant differences. Between urban and rural, the p-value was 0.029. Among age categories, 60-69 years vs. 30-39 years, the p-value was 0.003 and the adjusted p-value after pairwise comparison was 0.05. Among years in practice, comparing >20 years to 1-3 years in practice, the adjusted significance was 0.021. Regarding highest level of education, masters compared to doctorate revealed an adjusted significance of 0.005.

The mean and standard deviation were computed. The critical value for H statistic was determined using the difference between the means of before and after reading the fact sheet and the standard deviation. The anesthesia practice setting presented an H statistic of 10.457, df=2 and a p-value of 0.005, thus concluding that a knowledge deficit did exist among providers in different practice settings. The null hypothesis was rejected due to the statistically significant difference.

## Discussion

This study is the first to report anesthesia providers' knowledge toward positive language and the nocebo effect. Mean scores across the board were higher after reading the fact sheet (Q6: 3.03, Q7: 2.34, Q8: 3.18, Q9: 2.26, Q10: 3.01, Q11: 3.47, Q12: 3.13, Q13: 3.55, Q14: 3.39), suggesting the fact sheet was an appropriate method of facilitating learning (Table 6). Additionally, when utilizing descriptive statistics, total mean score minimum before reading the fact sheet was 1, while total mean score minimum after reading the fact sheet was 2. This improvement in minimum score makes it inherently clear that knowledge was gained from reading the fact sheet. The summary score also significantly improved with a score of 295 before reading the fact sheet and 362 after reading the fact sheet, as well as the statistical mean, which went from 2.76 before the fact sheet to 3.38 after reading. Standard deviation was less than one both before and after reading the fact sheet (0.56 and 0.49, respectively) and resultant histograms were not highly skewed. The slight (positive) right skew after reading the fact sheet suggests that participants learned, and knowledge was gained from the fact sheet, as seen in table 6.

When examining demographics of participants in correlation with the results of the study, many interesting patterns appeared. Independent variables such as age, years of practice, type of degree, and practice setting did influence anesthesia providers' knowledge of Positive Language. Gender did not play a significant role in the results; most of the study participants were female (72%) and the resulting p-value for after reading the fact sheet was 0.758, therefore suggesting that the null hypothesis would be retained. The age group that had the most influence over the data was the 30-39 years old and the 40-49 years old (28% of the participants and 25.2% of the participants, respectively). The Kruskal-Wallis test was run for the age category related to total mean score before and after reading the fact sheet. The p-value related to age before reading the fact sheet was 0.097 and after reading the fact sheet was 0.028. Due to the fact that 0.028 is less

than the 95% confidence interval, it was concluded that age was a major influence in scores, specifically, a more seasoned age of 30-49. This age can be attributed to the more confident practitioner versus a novice, younger provider. This increased age is associated with more continuing education including knowledge of publications, attendance of anesthesia conferences, and more hands-on experience.

Years of practice was a variable that largely influenced the results. First, when examining the data of years practicing as a CRNA, the resultant bar chart (Table 8) presents an evenly distributed graph, indicating that the study accurately depicted all levels of experience and gave excellent insight into how anesthesia providers in Illinois view the topic. Additionally, experience as an anesthesia provider is a good factor in determining knowledge of Positive Language. The participants with greater than 20 years of experience made up the largest percentage (30.8%) of our study participants. The Kruskal-Wallis test score for after reading the fact sheet was a p-value of 0.007 versus before reading fact sheet 0.140. The null hypothesis would be rejected with the p-value 0.007 and subsequently, the years of practice turns out to be the most statistically significant variable (p-value closest to 0.005). Like age, an increase in years of practice allows veteran practitioners to be more confident, and allows exposure to continuing education, anesthesia publications and periodicals, and more people including patients, operating room personnel, and anesthesia colleagues. Their experiences allow insight into what kind of communication is effective in anesthesia care and provides sample phrases picked up from colleagues.

The highest level of education variable presented with the largest group being the master's degree (49.5%). The p-value before reading the fact sheet was 0.401 and the p-value after reading was 0.008. This variable suggests that master's prepared anesthesia providers have

the best education related to our topic. The doctorate prepared CRNAs may have been hypothesized to have the most enhanced understanding due to the increased level of education and greater focus on evidence-based care, problem solving, and leadership. The most recent graduates of anesthesia programs in Illinois have been granted doctorate degrees. However, this group does not represent the most years of practice. Therefore, a correlation cannot be determined between doctorate degree, years of experience, or increased age. This variable cannot be relied on as the most significant when analyzing data from the study.

The variable practice setting presented with the largest parentage (45.8%) working in an urban setting. The Kruskal-Wallis test presented p-value before reading the fact sheet was 0.314 and 0.016 after reading the fact sheet, thereby rejecting the null hypothesis (after reading fact sheet score less than 0.05). This can be attributed to the fact that in Illinois, most urban hospital settings are academic. An academic practice setting is geared towards practice supported by evidence-based literature. Even though this topic is not widely published in anesthesia literature, it can be hypothesized that CRNAs in academic centers are more likely to incorporate and open to new practices.

Subsequently, study participants anticipated encountering barriers to implementation of Positive Language into their everyday practice (Table 7). The most cited reasons were pressure to use the verbal numeric pain scale and resistance to change. Participants also identified barriers in resistance from colleagues, and the lack of sample language and phrases to incorporate when interacting with patients. The disseminated fact sheet with sample language and phrases can serve as a valuable teaching tool and resource for those wishing to use Positive Language regularly. Resistance from colleagues may include anesthesia colleagues as well as other members of the perioperative team. Preoperative staff as well as operating room staff also have

interactions with patients and can potentially counteract the Positive Language used by CRNAs. For Positive Language to truly be effective, every member of the team must be educated and on board with the concept. One comment from a participant stated that her anesthesia colleagues were using Positive Language, but the system seems to break down in the Post Anesthesia Care Unit (PACU) where the nurses immediately ask for a numerical pain rating, further supporting the notion that education involves the entire perioperative team. Six participants responded that they did not believe in this topic or the facts presented, which confirms barriers that others perceive in terms of resistance from colleagues. Those who do not believe in the concept will not be likely to adopt a change in their language with patients.

The research study acknowledges limitations, the first being the small number of participants (N=107). A larger response pool may provide better insight into knowledge of the topic. The participants were largely female (72%), and while this is reflective of gender breakdown within the profession, having more male respondents could potentially alter results. The survey only reached people within the state of Illinois, and while Illinois has a mix of urban and rural settings, results cannot be extrapolated to the entirety of the nation. A broader pool of participants could yield differing results. Given the design of the survey, there are limitations within the honesty of the participant. The survey was not a typical pre- and post-test design. The participants were given the fact sheet, and then asked questions about their own knowledge of the topic before reading the fact sheet. The possibility exists that participants may not have been completely honest in their answers regarding their knowledge of the topic before reading the fact sheet, versus if they had taken a designated pre-test on the topic before seeing the fact sheet.

This study assessed the knowledge of anesthesia providers regarding positive language in the assessment of pain. It is essential for CRNAs to understand how their language can impact

patient outcomes regarding patient pain perception. The researchers of this study have observed that there is no teaching tool of Positive Language, nor the thoughtful approach of word choice and phrases when discussing procedures and activities perceived as painful. The results of this project can guide future practice in many ways. It can assist in bridging the gap by assessing pain with Positive Language while still complying with regulations set for reimbursement standards. The Nocebo effect has detrimental consequences and health care professionals should be aware of their influential role, taking every measure to avoid and reduce nocebo influences.[10] The first step is recognition of this presumed knowledge deficit. If providers can understand how they unintentionally increase reports of pain, becoming cognizant of Positive Language can assist in treating patients with multimodal therapy and reduce opioid use. The results of this project demonstrated to clinicians that simply stating questions and communicating differently is the first step to this multimodal approach. Lastly, the results of this project may give way for the creation of a new pain scale, possibly a comfort scale, that utilizes Positive Language.

Figure 1.

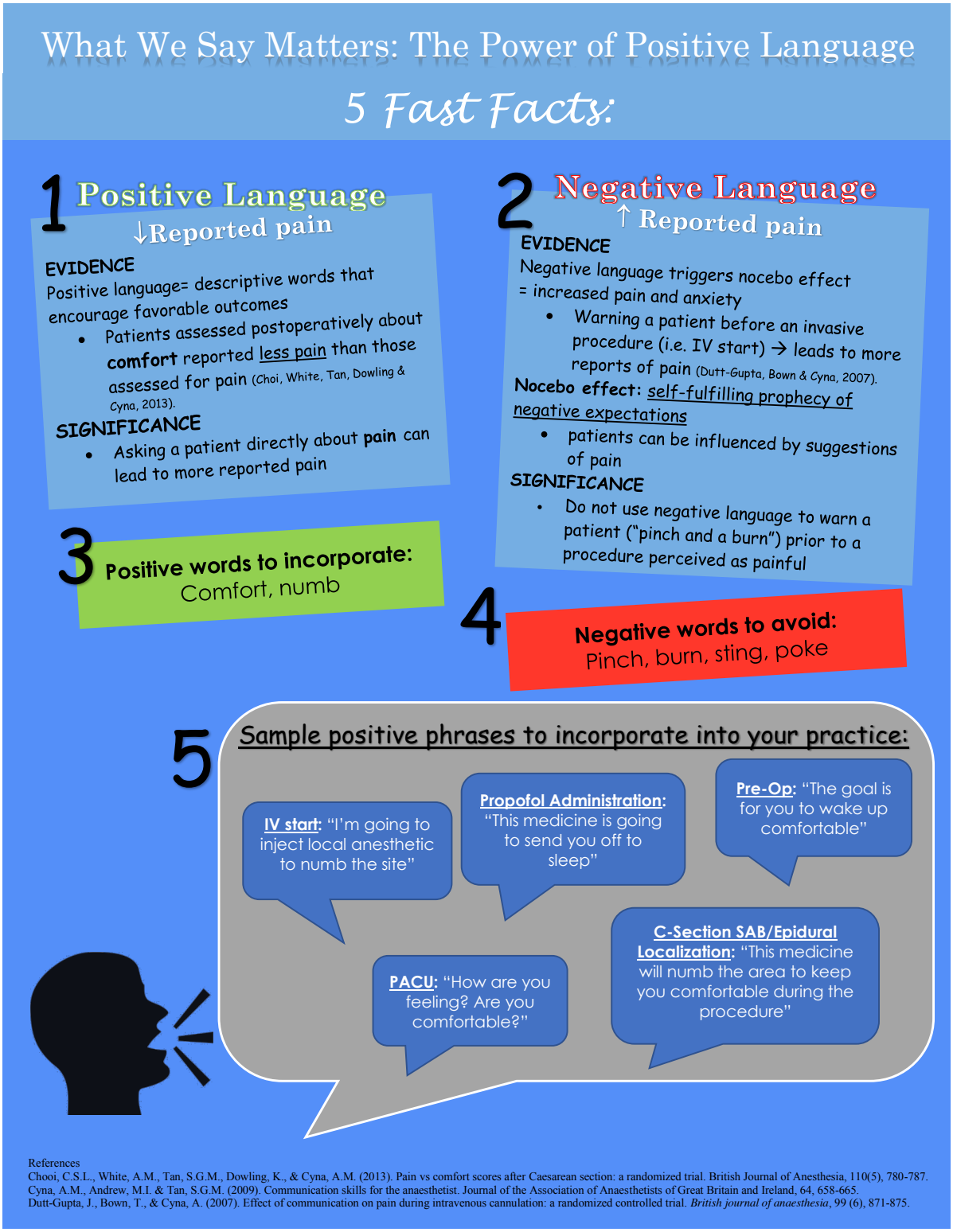
What We Say Matters: The Power of Positive Language
5 Fast Facts:
1 Positive Language
↓Reported pain
EVIDENCE
Positive language= descriptive words that encourage favorable outcomes
Patients assessed postoperatively about comfort reported less pain than those assessed for pain (Choi, White, Tan, Dowling & Cyna, 2013).
SIGNIFICANCE
Asking a patient directly about pain can lead to more reported pain
2 Negative Language
↑ Reported pain
EVIDENCE
Negative language triggers nocebo effect = increased pain and anxiety
Warning a patient before an invasive procedure (i.e. IV start) → leads to more reports of pain (Dutt-Gupta, Bown & Cyna, 2007).
Nocebo effect: self-fulfilling prophecy of negative expectations
patients can be influenced by suggestions of pain
SIGNIFICANCE
Do not use negative language to warn a patient ("pinch and a burn") prior to a procedure perceived as painful
3 Positive words to incorporate:
Comfort, numb
4 Negative words to avoid:
Pinch, burn, sting, poke
5 Sample positive phrases to incorporate into your practice:
IV start: "I'm going to inject local anesthetic to numb the site"
Propofol Administration: "This medicine is going to send you off to sleep"
Pre-Op: "The goal is for you to wake up comfortable"
C-Section SAB/Epidural Localization: "This medicine will numb the area to keep you comfortable during the procedure"
PACU: "How are you feeling? Are you comfortable?"
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Table 1.

**How many years have you been a practicing CRNA?**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | I am a student | 16 | 15.0 | 15.0 | 15.0 |
| | 1-3 years | 14 | 13.1 | 13.1 | 28.0 |
| | 4-6 years | 7 | 6.5 | 6.5 | 34.6 |
| | 7-10 years | 13 | 12.1 | 12.1 | 46.7 |
| | 11-15 years | 15 | 14.0 | 14.0 | 60.7 |
| | 16-20 years | 9 | 8.4 | 8.4 | 69.2 |
| | >20 years | 33 | 30.8 | 30.8 | 100.0 |
| | Total | 107 | 100.0 | 100.0 | |

Table 2.

**Indicate the highest level of education you have completed.**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Associate's degree | 1 | .9 | .9 | .9 |
| | Bachelor's degree | 22 | 20.6 | 20.8 | 21.7 |
| | Master's degree | 53 | 49.5 | 50.0 | 71.7 |
| | Doctorate degree (DNP/DNAP, EdD, PhD) | 30 | 28.0 | 28.3 | 100.0 |
| | Total | 106 | 99.1 | 100.0 | |
| Missing | System | 1 | .9 | | |
| Total | | 107 | 100.0 | | |

Table 3.

**What is your age category?**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 24-29 years | 9 | 8.4 | 8.4 | 8.4 |
| | 30-39 years | 30 | 28.0 | 28.0 | 36.4 |
| | 40-49 years | 27 | 25.2 | 25.2 | 61.7 |
| | 50-59 years | 17 | 15.9 | 15.9 | 77.6 |
| | 60-69 years | 23 | 21.5 | 21.5 | 99.1 |
| | 70+ years | 1 | .9 | .9 | 100.0 |
| | Total | 107 | 100.0 | 100.0 | |

Table 4.

**Which best describes your anesthesia practice setting?**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Urban | 49 | 45.8 | 45.8 | 45.8 |
| | Suburban | 35 | 32.7 | 32.7 | 78.5 |
| | Rural | 16 | 15.0 | 15.0 | 93.5 |
| | Other | 7 | 6.5 | 6.5 | 100.0 |
| | Total | 107 | 100.0 | 100.0 | |

Table 5.

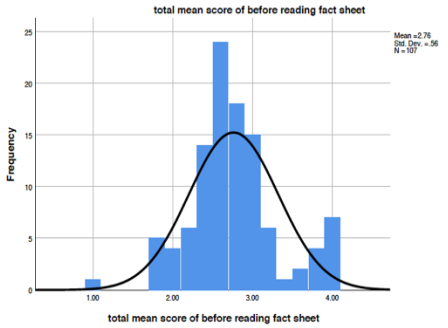
**Descriptive Statistics**

| | N | Range | Minimum | Maximum | Sum | Mean |
|---|---|---|---|---|---|---|
| | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic |
| total mean score after reading fact sheet | 107 | 2.00 | 2.00 | 4.00 | 362.25 | 3.3855 |
| total mean score of before reading fact sheet | 107 | 3.00 | 1.00 | 4.00 | 295.60 | 2.7626 |
| Valid N (listwise) | 107 | | | | | |

**Descriptive Statistics**

| | Mean | Std. Deviation | Variance | Skewness | |
|---|---|---|---|---|---|
| | Std. Error | Statistic | Statistic | Statistic | Std. Error |
| total mean score after reading fact sheet | .04756 | .49201 | .242 | -.314 | .234 |
| total mean score of before reading fact sheet | .05418 | .56041 | .314 | .345 | .234 |
| Valid N (listwise) | | | | | |

Table 6. Mean Score on Knowledge Before and After Reading the Fact Sheet



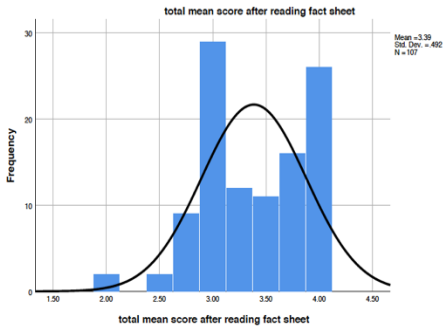
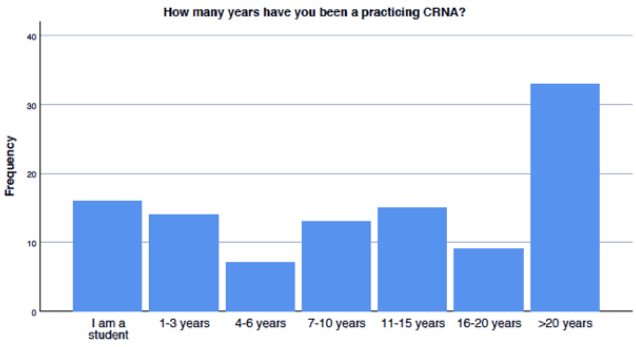




Table 7.

**After reading the fact sheet, I anticipate barriers to implementation of positive language into my anesthesia care.**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly disagree | 15 | 14.0 | 14.0 | 14.0 |
| | Disagree | 42 | 39.3 | 39.3 | 53.3 |
| | Agree | 37 | 34.6 | 34.6 | 87.9 |
| | Strongly agree | 13 | 12.1 | 12.1 | 100.0 |
| | Total | 107 | 100.0 | 100.0 | |

Table 8.



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