

RIDING THE TIDE OF MODERN HEALTHCARE: A RHETORICAL
ANALYSIS OF LOW TECHNOLOGIES

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Katlyn Brinkley

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Katlyn Brinkley

Thesis Supervisor:

Aimee Roundtree, PhD
Department of English

Approved:

Heather C. Galloway, Ph.D.
Dean, Honors College

TABLE OF CONTENTS

	Page
I. LIST OF FIGURES.....	v
II. ABSTRACT.....	1
III. Introduction: Riding the Tide of Modern Healthcare: A Rhetorical Analysis of Low Technologies.....	2
IV. Review of Literature.....	3
a. Medical Discourse.....	3
b. Pain and Risk Evaluation Forms.....	5
c. Conclusion of Literature Review.....	10
V. Historical Background.....	10
a. Numeric Pain Rating Scale.....	11
b. Visual Analogue Scale.....	12
c. Pain Quality Assessment Scale	13
d. Opioid Risk Tool.....	16
e. CAGE-AID Questionnaire.....	17
VI. Methods: Theoretical Background.....	18
VII. Results: Close Reading.....	24
a. Numeric Pain Rating Scale.....	24
b. Visual Analogue Scale.....	27
c. Pain Quality Assessment Scale.....	29
d. Opioid Risk Tool.....	31

e. CAGE-AID Questionnaire.....	33
VIII. Discussion.....	36
IX. Conclusion.....	36
X. Future Studies.....	39
XI. References.....	40

LIST OF FIGURES

	Page
I. <i>Figure 1.</i> Numeric Pain Rating Scale.....	12
II. <i>Figure 2.</i> Visual Analog Scale.....	13
III. <i>Figure 3.</i> Pain Quality Assessment Scale.....	14-16
IV. <i>Figure 4.</i> Opioid Risk Tool.....	17
V. <i>Figure 5.</i> CAGE-AID Questionnaire.....	18
VI. <i>Figure 6.</i> Semiotic Triangle by Ogden and Richards (1923).....	20
VII. <i>Figure 7.</i> The Semiotic Triangle adapted to the Numeric Pain Rating Scale.....	26

ABSTRACT

Healthcare systems tend to be pressured to run quickly and smoothly, both for patients and physicians. To address this, technology is used to accelerate the experience. The medical field requires trust and positive rapport between patient and physician, but the emergence of technology creates a risk of breaking that relationship. Studies have shown that there are certain healthcare settings that rely solely on technology, and this reliance on technology could prevent physicians from delivering the highest level of patient care and personalizing the common medical experience. Some examples of these technologies are pain and risk evaluation forms, which are documents that transform qualitative patient feedback into objective, quantifiable data. In this study, a rhetorical analysis of the language and implications of five commonly used pain and risk forms was conducted. After using theories by Charles Ogden, Ivor A. Richards, Marshall McLuhan, Robert Scott, Roland Barthes, and Aristotle to analyze the communication and rhetoric within these five technologies, this study argues that they are ineffective in providing the highest level of patient care. By relying too heavily on technology, many health problems can develop in the future. The results suggest that the evaluation forms and their scoring methods could be researched further. Additionally, the rhetoric could be refined in order to make appropriate use of the pain and risk evaluation forms; these changes would ensure that the patient-doctor relationship is not damaged and communication is preserved to deliver the most accurate treatment.

Riding the Tide of Modern Healthcare: A Rhetorical

Analysis of Low Technologies

In today's healthcare systems, understaffed medical settings and busy patient lives guarantee a desire for efficiency in medical appointments. However, there are some problems with depending on faster methods. Relying too heavily on technology to optimize the medical experience can cause many highly significant issues, such as damaged or lost connections between the patient and physician, inappropriate prescription and/or diagnosis, and lethal prescription-drug addiction habits.

Long-term, high-risk pain prescriptions begin with a consultation and administration of a pain or risk evaluation form, which is a document that patients fill out to convey their level of pain to physicians; risk forms are also completed by patients, which evaluate potential drug abuse risks based on patient history. Examples of high-risk prescriptions are opioids, or drugs that act on the nervous system to relieve pain.

According to the study conducted by doctors in the Journal of the American Medical Association titled "Sources of Prescription Opioid Pain Relievers by Frequency of Past-Year Nonmedical Use," nonmedical users who were on opioids for 1-29 days obtained the drugs from friends, relatives or other sources. However, "among nonmedical users reporting 200 to 365 days of use, opioid pain relievers were most often obtained via prescription from physicians" at 27.3% (Jones et al.). Long-term opioid prescriptions from physicians were found to be the most common method of getting the drugs among all opioid users, and patients who receive opioid prescriptions are at the highest at risk of drug abuse. It is vital that pain and risk assessment tools be updated and researched frequently so as not to be one of the many contributing factors to large-scale drug abuse,

such as the opioid epidemic.

In my study, I examine pain evaluation forms and risk evaluation forms used during initial interaction when prescribing high-risk pain medication. My rhetorical analysis examines three pain assessment forms—Numeric Pain Rating Scale, Visual Analog Scale, and Pain Quality Assessment Scale—and two risk forms—Opioid Risk Tool and CAGE Questionnaire Adapted to Include Drugs (CAGE–AID). After studying communication and rhetoric within these modern technologies, I am arguing that they produce efficiency and precision, yet their results are inaccurate concerning patient pain and risk levels, which can lead to misinformed prescriptions and higher rates of drug abuse. In this study, I will explain the history and background of each pain and risk assessment form and why they're used generally, describe the rhetorical and theoretical methods I used, provide close analyses of each form, and suggest possible recommendations for the future of these assessment tools.

Review of Literature

Medical Discourse

Healthcare is a complex field made up of many different discourses, approaches, and settings. Medical professionals are required to adapt their communication to different healthcare scenarios. While there are settings that necessitate unbiased, objective decisions, communicating with patients about sensitive topics such as death, pain, risk of abuse, or end-of-life-care requires a receptive attitude and attention from medical providers to patients as individuals. Emotional support and different types of communication from physicians are as valuable as medical knowledge, which is emphasized in the following study.

The value of establishing positive rapport. For physicians to capture as much feedback as possible from patients being evaluated for high-risk pain medication, positive rapport must be established. Medical rapport describes the relationships or connections between physicians and patients. This relationship concerns not only the medical nature of an appointment, but also the trust that patients have with their physicians. Since the medical field is emotional and psychological, the relationship patients believe they have with their physician is vital to ensuring that they are completely honest about their health.

In a popular study called “Nonverbal communication and physician–patient rapport: An empirical study,” approximately 471 patients and medical residents were asked how satisfied they were with two aspects of a medical experience: the value of their care and the nonverbal communication they observed from their physician. To guide patients in their evaluations, a Personality Research Form and a Profile of Nonverbal Sensitivity scale were used. In the study, “Patients rated their physicians on caring and sensitivity, indicated the extent to which the physicians listened to what they had to say and cared about them as people, and indicated whether they felt they could call the doctor if necessary” (Dimatteo & Taranta, 1979). The basis of this study’s hypothesis illustrates the need to understand that medical discourse extends further than solely health concerns; if a patient does not feel they were not treated with care or as individuals, the relationship between them can be severely damaged. Subsequently, patients could feel uncomfortable calling their doctor, thus putting themselves at risk if an emergency occurs.

Nonverbal communication can be received as naturally as verbal communication. This study evaluated the nonverbal cues of the physician as well as how the physician interpreted the patient’s nonverbal messages. The results of the study were that “the

socioemotional dimension of the physician–patient relationship depends, to a moderate degree at least, on the physician's ability to understand the patient's nonverbal cues of affect and on the physician's ability to intentionally communicate affect through nonverbal channels” (Dimatteo & Taranta, 1979). Examples of nonverbal cues are eye contact, posture, facial expressions, and nodding or giving signals that the other communicator is being heard. Without positive signs like these, among others, patients from this study reported the rapport being less established. This study and its implications outlined some of the extra details that medical discourse requires.

Pain and Risk Evaluation Forms

Pain evaluation is one of the most challenging aspects of healthcare; pain is a dynamic, multifaceted experience that is felt physically, but that is physically immeasurable for physicians. When prescribing pain medication, physicians convert subjective feedback from patients into objective data that determines the most appropriate prescription for each patient. Since there is no one standard for measuring pain, pain assessment forms were invented to facilitate this process. Patients use these forms to describe their pain sensations using verbal, visual, or numerical scales.

There are also larger implications for the prescription results of these forms. When dealing with intense, chronic pain, physicians must determine whether prescribing highly addictive medication is appropriate based on patient history and/or psychological well-being. Documents called risk assessment forms are used in these scenarios, which attempt to evaluate the possible dangers associated with individuals regarding high-risk drugs.

The following studies look specifically at discourse over pain and risk assessment

by using pain or risk tools. If these tools are inaccurate or insufficient, there could be larger malpractice issues caused by writing high-risk prescription pain medication incorrectly.

Content, usability, and measurement factors on pain scales. Pain scales are used when patients require high-risk pain medication to help physicians decide what kind of medication, dosage, and length a prescription should be written for. Most often, these prescriptions are for chronic pain. In a study called “Measures of adult pain: Visual Analog Scale for Pain (VAS Pain), Numeric Rating Scale for Pain (NRS Pain), McGill Pain Questionnaire (MPQ), Short-Form McGill Pain Questionnaire (SF-MPQ), Chronic Pain Grade Scale (CPGS), Short Form-36 Bodily Pain Scale (SF-36 BPS), and Measure of Intermittent and Constant Osteoarthritis Pain (ICOAP),” the researchers aimed to provide an “overview of available generic and rheumatology population–specific questionnaires suitable for evaluating pain in adult rheumatology populations” to determine their effectiveness (Hawker, Mian, Kendzerska, & French, 2011).

The results of the study were that the NRS and the VAS pain scales were “easy to administer, complete, and score.” Of these two scales, the NRS was estimated to be preferred by patients due to its simpler scoring methods. The study found that this form may also be preferred by researchers due to its verbal and written administration options. However, “neither measure provide[d] a comprehensive evaluation of pain” in patients with rheumatic disease, which was what the study was researching (Hawker, Mian, Kendzerska, & French, 2011). The study found that the McGill Pain Questionnaire, the Chronic Pain Grade Scale, Short Form-36 Bodily Pain Scale, and the Measure of Intermittent and Constant Osteoarthritis Pain scale “evaluate the multiple dimensions of

acute and chronic pain” more adequately. Ultimately, the factors purpose variability, content, method of administration, respondent and administrative burden, and psychometric properties of each measure revealed that not every form in the study could be used for any type of pain evaluation, and the researchers “encourage clinicians and researchers to use this information presented in this chapter to help guide the selection of the questionnaire that is most appropriate for their specific purpose” to use each pain assessment tool to its full potential (Hawker, Mian, Kendzerska, & French, 2011).

Modest accuracy in the most common pain scale. The Numeric Pain Rating Scale, or NRS, has become the most common pain assessment resource used due to its advantages, such as its quick and simple administration and scoring methods. The NRS measures one dimension of pain, which is pain intensity, on a scale from 0—labeled “no pain,” to 10—labeled “worst possible pain.” The aim of the study “Accuracy of the Pain Numeric Rating Scale as a Screening Test in Primary Care” was to determine the accuracy of the NRS scale as a screening tool to classify patients with clinical pain (Krebs, Carey, & Weinberger, 2007).

During the study, the researchers “categorized pain screening NRS scores as mild (1–3), moderate (4–6), or severe (7–10)... [and] chose a score of 4 as the lower limit for moderate pain because it is most commonly accepted for clinical and administrative use” based on previous trials, even though the NRS forms they presented to the patients did not have these specifications (Krebs, Carey, & Weinberger, 2007). The extra grouping of numbers was for ease of analysis for research purposes. There were 275 patients interviewed after participation.

The results of the study were that “the pain screening NRS had only modest

accuracy for identifying patients with clinically important pain in an academic primary care clinic” (Krebs, Carey, & Weinberger, 2007). The researchers concluded that there were two main reasons that the NRS did not successfully identify pain: firstly, they estimated it was due to the simple nature of the NRS, which meant that “In settings where pain is often chronic and complex, the simple pain screening NRS may fail to identify patients with pain-related suffering driven by functional limitations, illness worry, or other factors,” which are common emotions that accompany pain (Krebs, Carey, & Weinberger, 2007). The second problem with the NRS was the wording. The form asked patients to focus on their current pain, which could overlook less common, sporadic pain experiences. Additionally, “pain” was sometimes an inaccurate word for patients who felt that it was not pain they felt, but “discomfort,” for example. Conclusively, the study on the effectiveness of the Numeric Pain Rating Scale found that standardized methods of pain evaluation is a widespread practice “despite a lack of published research evaluating the accuracy and effectiveness of pain screening strategies,” which means that while pain screening remains needed, current pain assessment tools require further development (Krebs, Carey, & Weinberger, 2007).

Insufficient screening tools for misuse/addiction risk. There are three common risk assessment tools, including the CAGE-AID, Opioid Risk Tool and Screener and Opioid Assessment for Patients with Pain. These documents evaluate the risk potential of for abusing or becoming addicted to drugs based on “history, family history and psychological make-up that statistically put the patient at increased risk of developing an addiction to any psychoactive substance” (Jovey, 2012). In Jovey’s article titled “Opioids, pain and addiction – practical strategies,” the commonly encountered issues

with high-risk medications, such as opioids, are described in detail. Jovey describes many different scenarios involving opioids, and one of his focuses was on screening for misuse and addiction risk. The CAGE-AID form and the Opioid Risk Tool were the screening tools evaluated that pertain to my study.

After evaluating the CAGE-AID form, Jovey found that administration of the CAGE-AID form required extra steps for medical providers to take, such as asking patients about the frequency of using alcohol or drugs, amounts consumed, and their home environment. The study also cautioned administrators to keep in mind that “One positive response to any of the CAGE-AID questions would suggest caution. Two or more positive responses require further assessment for a serious alcohol or drug problem” (Jovey, 2012). The analysis revealed that the CAGE-AID form functioned better when accompanied with additional questions asked by the administrator.

The Opioid Risk Tool was the other form analyzed in the study, and was found to be potentially “more susceptible to deception...as the ORT depends on honest reporting by the patient,” (Jovey, 2012). There were two main conclusions regarding the ORT’s functionality in assessing risk. Jovey’s first finding was that “In spite of one’s best efforts at screening, it is possible that some patients with a primary underlying addictive disorder will be missed” due to the difficulty in detecting risks (2012). The second finding was that “In those patients with recognized risk factors for addiction, the clinician and the properly informed patient may jointly choose to undertake a cautious trial of opioid therapy in spite of the risk” because of the unreliability of the ORT (Jovey, 2012).

The results of the study were that “addiction versus pain...can be very difficult to assess, even for the addiction specialist, and may only become clearer after a careful trial

of therapy with ‘tight’ prescribing boundaries, agreed-upon goals and close monitoring” (Jovey, 2012). Risk screening tools were a prominent part of this study, and a large result was that “Treating the higher-risk patient with opioids requires more assessment, more structure and more monitoring” as risk assessment tools continue to be created and developed (Jovey, 2012).

Conclusion of Literature Review

Each of these studies analyzed the nature of healthcare and how common pain and risk assessment tools contribute to those experiences in terms of measuring pain and risk potentials. While the objectives of these tools are useful, the research findings indicate further development would improve the forms, specifically being altered to include more patient consideration.

History and Background

Before the history of each form is discussed, it is important to preface their individual histories with the origin of pain assessment as a whole. Before the late 1990s, patient pain was not acknowledged. “Several factors pushed the needle to this point. There had been growing recognition that pain was being vastly under-treated and not taken seriously,” wrote Elana Gordon in her article “Reassessing the assessment of pain: how the numeric scale became so popular in healthcare” (2016). In the latter part of the 1990s, nurses and staff in California hospitals began to ask patients about their pain intensity, asking them to gauge it on a scale of 0-10. This scale became the natural, common way to retrieve pain information across the America.

The early 2000s were a pivotal point for pain culture in the United States, and they were marked as “the decade for improving pain” (Gordon, 2016). President Bill

Clinton signed H.R. 3244--or the Providing Innovative Care for Complex Cases Demonstration Act of 2015--into law, and pain research and control became requirements. The 0-10 pain intensity measurement was instilled into every electronic medical record, becoming the new standard. It is also important to note the original intention of how the forms surfaced in healthcare; neurologist Dr. John Farrar of Pennsylvania State Medicine said that "The primary impetus for the development of the scales we use today was...not so much for patients to tell us how much pain they have in the clinical setting, but to standardize it from the perspective of being able to study it for research purpose" (2016). The fact that the pain scales were not originally written for patients to fill out themselves explains how the origin of pain scales is important to my study because it reveals the embryonic state they currently occupy in healthcare and assists the acceptance of recommendations for the improvement of the scales. The next section of this thesis describes the backgrounds of the Numeric Pain Intensity Scale, Visual Analogue Scale, Pain Quality Assessment Scale, Opioid Risk Tool, and CAGE-AID Questionnaire.

Numeric Pain Rating Scale (NRS)

The Numeric Pain Rating Scale is a form that measures pain intensity in adults and adolescents. The NRS is a version of the Visual Analog Scale, and it was developed to "improve discrimination for detecting relatively small changes" that purely visual VASs could not capture (physiopedia.org). Similarities can be seen in the anchors that label the two ends of the scale and the horizontal layout. This form is also known as the 11-item NRS to distinguish it from other visual analog versions, as the original formats do not contain numerical indicators. The Numeric Pain Rating Scale consists of numbers

0-10, with 0 being “no pain” and 10 being “worst possible pain.” This is one of the most common version of the Visual Analog Scales used to measure pain intensity. It asks the patient to recall their average pain experience from the last 24 hours, and can be administered verbally or filled out physically by the patient. The NRS takes less than one minute to administer and score, and this feature is listed under the advantages of the form (physiopedia.org).

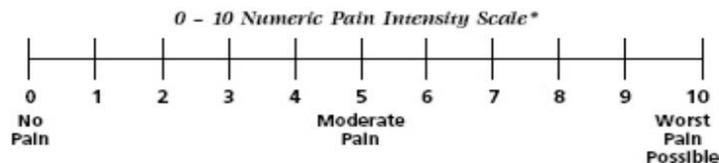


Figure 1. Numeric Pain Rating Scale

Visual Analog Scale

The Visual Analog Scale is a unidimensional scale used to measure pain intensity and “most commonly respondents are asked to report ‘current’ pain intensity or pain intensity ‘in the last 24 hours.’” Its first use was reported with the anchors “no pain at all” and “my pain is as bad as it could possibly be” at 0 and 10, respectively (Woodforde & Merskey). The VAS is intended to record pain intensity for many different conditions in adults and it comes in many forms, such as numerical rating scales, curvilinear analogue scales, "box-scales" with circles equidistant from each other, and graphic rating scales (http://www.physiopedia.com/Visual_Analogue_Scale). In its different versions, the VAS aims for the same result, and each is completed by the patient themselves. My study focuses on the simplest version, a solid horizontal line with no hash marks stretching

from “no pain” to “pain as bad as it could possibly be.” With a ruler, a score is determined by “measuring the distance (mm) on the 10-cm line between the ‘no pain’ anchor and the patient’s mark, providing a range of scores from 0–100” (Hawker, Mian, Kendzerska, & French, 2011). The Visual Analogue Scale takes less than one minute to administer and score, and this feature is listed as one of the advantages of the form (opioidrisk.org).

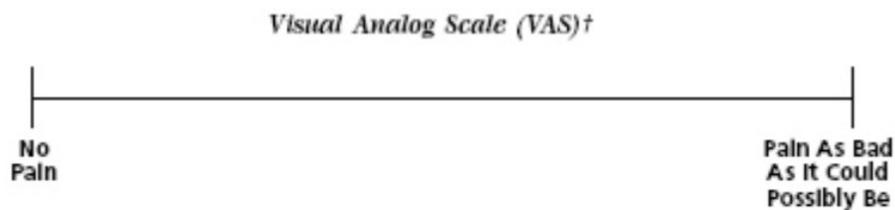


Figure 2. Visual Analog Scale

Pain Quality Assessment Scale

The Pain Quality Assessment Scale (PQAS) was developed by Bradley Galer, Arnold Gammaitoni, and Mark Jensen. The objective of the PQAS is “to assess distinct pain qualities associated with all types and categories of pain problems, including both nociceptive and neuropathic pain” (eprovide.mapi-trust.org/instruments/pain-quality-assessment-scale-and-revised-pain-quality-assessment-scale). The most recent version of the scale was revised in 2010 but was derived from the Neuropathic Pain Scale that was originally developed in 2006. The layout of the current PQAS is similar to the Neuropathic Pain Scale, containing boxes with descriptions or questions in each one followed by a scale from 0-10. These scales have anchors labelling 0 and 10 based on the objective of each specific box. One major difference between the NPS and the current

PQAS is that there are 20 questions rather than 10. Another change the PQAS form displays is the lack of an open-ended question like number 8 on the Neuropathic Pain Scale, which allows patients to describe their pain in their own words; the PQAS is entirely comprised of pain scales. The patient is required to answer the 20-item list, which targets pain intensity, sharpness, “hotness” or “coolness,” dullness, sensitivity, tenderness, itchiness, shooting sensation, numbness, electrical sensation, tingling sensation, cramping sensation, radiation, throbbing sensation, achiness, heaviness, unpleasantness, deep or surface-level, pain time qualities.

PAIN QUALITY ASSESSMENT SCALE[®] (PQAS[®])

Instructions: There are different aspects and types of pain that patients experience and that we are interested in measuring. Pain can feel sharp, hot, cold, dull, and achy. Some pains may feel like they are very superficial (at skin-level), or they may feel like they are from deep inside your body. Pain can be described as unpleasant and also can have different time qualities.

The Pain Quality Assessment Scale helps us measure these and other different aspects of your pain. For one patient, a pain might feel extremely hot and burning, but not at all dull, while another patient may not experience any burning pain, but feel like their pain is very dull and achy. Therefore, we expect you to rate very high on some of the scales below and very low on others.

Please use the 20 rating scales below to rate how much of each different pain quality and type you may or may not have felt OVER THE PAST WEEK, ON AVERAGE.

1. Please use the scale below to tell us how intense your pain has been over the past week, on average.		
No pain	0 1 2 3 4 5 6 7 8 9 10	The most intense pain sensation imaginable
2. Please use the scale below to tell us how sharp your pain has felt over the past week. Words used to describe sharp feelings include “like a knife,” “like a spike,” or “piercing.”		
Not sharp	0 1 2 3 4 5 6 7 8 9 10	The most sharp sensation imaginable (“like a knife”)
3. Please use the scale below to tell us how hot your pain has felt over the past week. Words used to describe very hot pain include “burning” and “on fire.”		
Not hot	0 1 2 3 4 5 6 7 8 9 10	The most hot sensation imaginable (“burning”)

Figure 3. Pain Quality Assessment Form

4. Please use the scale below to tell us how dull your pain has felt over the past week.		
Not dull	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	The most dull sensation imaginable
5. Please use the scale below to tell us how cold your pain has felt over the past week. Words used to describe very cold pain include "like ice" and "freezing."		
Not cold	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	The most cold sensation imaginable ("freezing")
6. Please use the scale below to tell us how sensitive your skin has been to light touch or clothing rubbing against it over the past week. Words used to describe sensitive skin include "like sunburned skin" and "raw skin."		
Not sensitive	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	The most sensitive sensation imaginable ("raw skin")
7. Please use the scale below to tell us how tender your pain is when something has pressed against it over the past week. Another word used to describe tender pain is "like a bruise."		
Not tender	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	The most tender sensation imaginable ("like a bruise")
8. Please use the scale below to tell us how itchy your pain has felt over the past week. Words used to describe itchy pain include "like poison ivy" and "like a mosquito bite."		
Not itchy	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	The most itchy sensation imaginable ("like poison ivy")
9. Please use the scale below to tell us how much your pain has felt like it has been shooting over the past week. Another word used to describe shooting pain is "zapping."		
Not shooting	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	The most shooting sensation imaginable ("zapping")

16. Please use the scale below to tell us how aching your pain has felt over the past week. Another word used to describe aching pain is "like a toothache."		
Not aching	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	The most aching sensation imaginable ("like a toothache")
17. Please use the scale below to tell us how heavy your pain has felt over the past week. Other words used to describe heavy pain are "pressure" and "weighted down."		
Not heavy	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	The most heavy sensation imaginable ("weighted down")
18. Now that you have told us the different types of pain sensations you have felt, we want you to tell us overall how unpleasant your pain has been to you over the past week. Words used to describe very unpleasant pain include "annoying," "bothersome," "miserable," and "intolerable." Remember, pain can have a low intensity but still feel extremely unpleasant, and some kinds of pain can have a high intensity but be very tolerable. With this scale, please tell us how unpleasant your pain feels.		
Not unpleasant	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	The most unpleasant sensation imaginable ("intolerable")
19. We want you to give us an estimate of the severity of your deep versus surface pain over the past week. We want you to rate each location of pain separately. We realize that it can be difficult to make these estimates, and most likely it will be a "best guess," but please give us your best estimate.		
HOW INTENSE IS YOUR DEEP PAIN?		
No deep pain	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	The most intense deep pain sensation imaginable
HOW INTENSE IS YOUR SURFACE PAIN?		
No surface pain	<input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10	The most intense surface pain sensation imaginable

Figure 3. Continued

10. Please use the scale below to tell us how numb your pain has felt over the past week. A phrase that can be used to describe numb pain is "like it is <u>asleep</u> ."	
Not numb	The most numb sensation imaginable ("asleep")
0 1 2 3 4 5 6 7 8 9 10	
11. Please use the scale below to tell us how much your pain sensations have felt electrical over the past week. Words used to describe electrical pain include "shocks," "lightning," and "sparking."	
Not electrical	The most electrical sensation imaginable ("shocks")
0 1 2 3 4 5 6 7 8 9 10	
12. Please use the scale below to tell us how tingling your pain has felt over the past week. Words used to describe tingling pain include "like pins and needles" and "prickling."	
Not tingling	The most tingling sensation imaginable ("pins and needles")
0 1 2 3 4 5 6 7 8 9 10	
13. Please use the scale below to tell us how cramping your pain has felt over the past week. Words used to describe cramping pain include "squeezing" and "tight."	
Not cramping	The most cramping sensation imaginable ("squeezing")
0 1 2 3 4 5 6 7 8 9 10	
14. Please use the scale below to tell us how radiating your pain has felt over the past week. Another word used to describe radiating pain is "spreading."	
Not radiating	The most radiating sensation imaginable ("spreading")
0 1 2 3 4 5 6 7 8 9 10	
15. Please use the scale below to tell us how throbbing your pain has felt over the past week. Another word used to describe throbbing pain is "pounding."	
Not throbbing	The most throbbing sensation imaginable ("pounding")
0 1 2 3 4 5 6 7 8 9 10	
20. Pain can also have different time qualities. For some people, the pain comes and goes and so they have some moments that are completely without pain, in other words the pain "comes and goes". This is called intermittent pain. Others are never pain free, but their pain types and pain severity can vary from one moment to the next. This is called variable pain. For these people, the increases can be severe, so that they feel they have moments of very intense pain ("breakthrough" pain), but at other times they can feel lower levels of pain ("background" pain). Still, they are never pain free. Other people have pain that really does not change that much from one moment to another. This is called stable pain. Which of these best describes the time pattern of your pain (please select only one):	
<input type="checkbox"/> I have intermittent pain (I feel pain sometimes but I am pain-free at other times). <input type="checkbox"/> I have variable pain ("background" pain all the time, but also moments of more pain, or even severe "breakthrough pain or varying types of pain). <input type="checkbox"/> I have stable pain (constant pain that does not change very much from one moment to another, and no pain-free periods).	

Copyright © Galer, Jensen & Gammaitoni, 2003, All Rights Reserved. Jensen, M.P. (in press). Pain assessment in clinical trials. In D. Carr & H. Wittink (Eds.), Evidence, outcomes, and quality of life in pain treatment. Amsterdam: Elsevier.

PQAS contact information: Information Resources Centre, Mapi Research Trust, 27 rue de la Vilette, 69003 Lyon, FRANCE - Tel: +33 (0) 472 13 65 75 - Fax: +33 (0) 472 13 66 82 - E-mail: busldoc@mapi.fr - Internet: www.mapi-trust.org (conditions of use and user-agreement are provided). Useful information about the PQAS (such as references, translations available, scoring and others) is available on the Quality of Life Instrument Database (QOLID), available on the Internet at www.QOLID.org

Figure 3. Continued

Opioid Risk Tool

The Opioid Risk Tool (ORT) is a questionnaire developed by Dr. Lynn R. Webster in her study "Predicting aberrant behaviors in opioid-treated patients: preliminary validation of the Opioid Risk Tool," in which it "predicted which patients were at the highest and lowest risks of exhibiting aberrant, drug-related behaviors associated with abuse or addiction" (2005). The ORT contains a numerical chart split into five categories whose scores are intended to combine, and should be administered on a patient's initial visit before high-risk prescription. It is administered and scored in less

than one minute, which is listed as an advantage to the form (opioidrisk.org).

Opioid Risk Tool (ORT)
Questionnaire developed by Lynn R. Webster, MD to assess risk of opioid addiction.

MARK EACH BOX THAT APPLIES	FEMALE	MALE
FAMILY HISTORY OF SUBSTANCE ABUSE		
Alcohol	<input type="checkbox"/> 1	<input type="checkbox"/> 3
Illegal drugs	<input type="checkbox"/> 2	<input type="checkbox"/> 3
Rx drugs	<input type="checkbox"/> 4	<input type="checkbox"/> 4
PERSONAL HISTORY OF SUBSTANCE ABUSE		
Alcohol	<input type="checkbox"/> 3	<input type="checkbox"/> 3
Illegal drugs	<input type="checkbox"/> 4	<input type="checkbox"/> 4
Rx drugs	<input type="checkbox"/> 5	<input type="checkbox"/> 5
AGE BETWEEN 16–45 YEARS	<input type="checkbox"/> 1	<input type="checkbox"/> 1
HISTORY OF PREADOLESCENT SEXUAL ABUSE	<input type="checkbox"/> 3	<input type="checkbox"/> 0
PSYCHOLOGIC DISEASE		
ADD, OCD, bipolar, schizophrenia	<input type="checkbox"/> 2	<input type="checkbox"/> 2
Depression	<input type="checkbox"/> 1	<input type="checkbox"/> 1
SCORING TOTALS		

ADMINISTRATION

- On initial visit
- Prior to opioid therapy

SCORING (RISK)

0–3: low
 4–7: moderate
 ≥8: high

RX ABUSE PREVENTION TOOLKIT: from awareness to action www.PreventRxAbuse.org

Figure 4. Opioid Risk Tool

CAGE-AID Questionnaire

The CAGE-AID Questionnaire is a four-question form developed by the American Psychiatric Association in 2002 used to evaluate potentially negative drug and alcohol habits. The CAGE-AID form is the adapted version of the CAGE form, which only tested for alcohol risk and now includes drugs. CAGE is an acronym for the keywords presented in each of the four questions: **C**ut down on substance use, becoming **A**nnoyed by criticism of substance use habits, feeling **G**uilty about one's use of substances, and using drugs an **E**ye-opener in the morning to alleviate discomfort. “AID” stands for “adapted to include drugs,” since the original screening tool only tested for alcohol abuse. The CAGE-AID form “assesses the likelihood and severity of alcohol and

drug abuse for adults and adolescents,” recognizing the risks of both addictions, and is administered by a physician before a new high-risk medication is prescribed (opioidrisk.com). It is important to note that this form was not created for pain evaluation, but for alcohol risk screening. The adapted tool is not designed to deny patients opioid treatment, but rather to identify patients at high-risk for closer monitoring (Butler, 2008). The CAGE-AID form takes one minute to administer and score, and this feature is described as an advantage of the form (opioidrisk.org).

**The CAGE Questionnaire Adapted to Include
Drugs (CAGE-AID)**

1. Have you felt you ought to cut down on your drinking or drug use?
2. Have people annoyed you by criticizing your drinking or drug use?
3. Have you felt bad or guilty about your drinking or drug use?
4. Have you ever had a drink or used drugs first thing in the morning to steady your nerves or to get rid of a hangover (eye-opener)?

Score: __ /4

2/4 or greater = positive CAGE, further evaluation is indicated

Source: Reprinted with permission from the *Wisconsin Medical Journal*. Brown, R.L., and Rounds, L.A. Conjoint screening questionnaires for alcohol and drug abuse. *Wisconsin Medical Journal* 94:135-140, 1995.

Figure 5. CAGE-AID Questionnaire

Methods: Theoretical Background

In this rhetorical analysis, I study how the language and presentation of research were used in these evaluation forms when prescribing high-risk pain medication. I investigate how these forms’ rhetoric could have affected the patient-doctor relationship and ultimately whether assessing pain or risk through these technologies rather than face-to-face discourse is a suitable way to attain accurate pain information from patients in

terms of communication.

Firstly, my analysis uses the semantic triangle, developed by theorists Charles Kay Ogden and Ivor Armstrong Richards, to show the importance of the communication process regarding *symbols*, *thoughts*, and *referents*. The semantic triangle “outlines the relationship between [these] three elements of meaning”; symbols can be images or words, thoughts are the ideas we have about those symbols, and the objects that are referred to by those symbols are called referents (Borchers, 2011). Ogden and Richards made two prevalent points that support my analysis of the pain and risk forms; firstly, “Symbols cause certain thoughts, and, reciprocally, certain thoughts cause the use of certain symbols” (Borchers, 2011). By using words or images on the pain or risk evaluation forms, patients could be influenced by them if unknown, predisposed connotations exist in the symbols. The second point Ogden and Richard make is that “Our thoughts are caused by the symbols others communicate to us” (Borchers, 2011). They explained, “When we hear what is said, the symbols cause us to perform an act of reference and to assume an attitude” (Ogden and Richards, 1928). Since patients understand they are being evaluated for pain during their visit, this theory could suggest a sway in their scores based on what they believe they should be answering. Not only does this theory support the danger of patients having the opportunity to exaggerate their scores to attain high-risk prescriptions more frequently, but it could also be detrimental to patients who would undermine pain levels so as not to seem exaggerative to physicians. By relying only on visual aids and numeric scales to convey pain, the idea that a patient’s “10” is probably drastically different from what a physician may consider a “worst pain imaginable” could potentially intimidate patients to minimize pain levels.

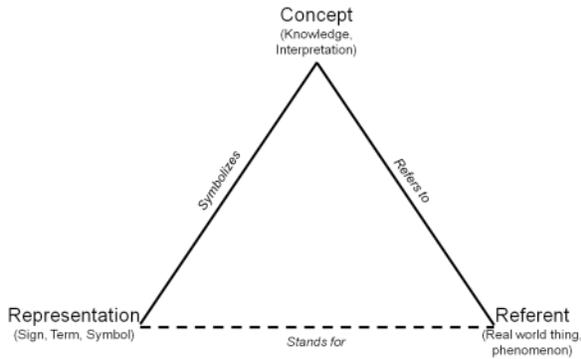


Figure 6. Semiotic Triangle by Ogden and Richards (1923)

The dotted line between symbol and referent on the semantic triangle is very significant to my study as well; the relationship between these two corners is not inherent or connected directly. Consider this example: the word “chair” immediately develops an image in one’s brain when they read the word. However, the actual letters that form the word chair do not make a chair--they make an image. Every person who reads the word “chair” will think of their own thought for that image, or symbol. Thus, since “These relationships are subjective and arbitrary,” they can cause subjectivity and inaccuracy when physicians depend on generic scales to evaluate patients individually for a tailored prescription (Borchers, 2011).

My study also leans substantively on Canadian philosopher Marshall McLuhan’s theories of media. I use McLuhan’s term *cool media* to describe the forms. Cool media is a concept described as a time-binding interaction that “requires that the audience member fill in information [and] provides a meager amount of information” (Borchers, 2011). His term time-binding refers to a media type that requires close interaction and involvement from the audience to preserve practices and history” (Borchers 260). Furthermore, his idea of cool media requires readers to accept these pain scales as *low technologies*. A low technology is one that is simple and does not seek sophisticated results. Next, McLuhan’s

coined statement “medium is the message” is crucial to my study. He says that, “the personal and social consequences of any medium...result from the scale that is introduced to our affairs by each extension of ourselves, or by any new technology” (Borchers, 2011). Essentially, the method of transmitting information affects the meaning of the message, and each message is dependent on the medium used to convey that information. In this analysis, the medium is the written form that patients complete, whether it be pain or risk evaluation. McLuhan believed that how we perceive the world depends on the media we use, which enables the possibility that patients perceive pain as a unidimensional, superficial experience, since that is how the forms are presented. This confusion can cause danger when patients are responsible for reporting their pain and are limited to confined, written mediums whose structures do not encourage elaboration or further speculation.

However, while my argument relies heavily on Marshall McLuhan’s theories and rhetorical media concepts, it finds flaws with his idea that media as “extensions of the human nervous system” in the setting of the pain and risk evaluation form analysis. This is because McLuhan’s perspective on media illustrates that technology is *prosthesis*, which means that “Technology is an extension of what we do naturally and who we are supposed to become” (Roundtree, 2016). Prosthesis is where I believe healthcare settings must create a definitive border between media technologies and tools. Since these forms are low technologies, their service as assistive tools in evaluating pain and risk should be limited to low potential. Technology as prosthesis can only be applied successfully to high technologies, which target more sophisticated efforts and would fit the description of “what we do naturally”; for example, a phone. The use of phones and social media, for

instance, exemplifies the human need to make connections and receive attention for their contribution in the world and its discussions. Low technologies, alternatively, can only serve as tools to assist with concepts that are difficult to encompass in solely verbal communication. The term for a low technology's potential and use is *instrumentalism*. Instrumentalism is defined as “just a tool for some practical purpose, not some absolute or ideal good or evil” (Roundtree, 2016). This definition describes the limit of pain and risk assessment tools, and emphasizes the necessity of discourse to accompany them so that the participants in the conversation--not the forms--can determine the beneficial or detrimental nature of the discussion. This term shift addresses problems of liability and agency for human entities in healthcare.

The theory that “messages result from the ‘interacting of speakers, listeners, and the world in which they live’” was formed by Robert Scott in his study “A synoptic view of systems of Western rhetoric,” and it is important to my thesis in terms of who the forms are directed toward (Borchers, 2011). Scott studied different time periods of communication theory and identified which element they emphasized most between the speaker, listener, or world. The pain and risk forms originally were created to assist researchers to evaluate these factors in patients, not for patient use. Thus the original intent of many of the forms could be described as a *pragmatic-dominant* pattern of emphasis, where the order of significance is speaker, world, and listener. However, as pain and risk evaluation have become more valued, the movement to measure pain has evolved into a *social* pattern of emphasis: listener, speaker, world. To preserve the effort to consider patient pain first, the forms should aim to have the social pattern above the pragmatic-dominant pattern.

Roland Barthes, a French semiologist and theorist, contributed to media theory by his analyses of visual images. He identified three types of messages in advertisements, which he specialized in, and his *linguistic* message type interests my thesis. The “linguistic message...results from the words used in the image. These words can have both *denotative* and *connotative* meaning” (Borchers, 2011). All linguistic messages contain denotative and connotative meanings. For patients reading the pain and risk forms, they would be assessing the linguistic messages and developing their own connotative meanings for what they entail, while the goal would be to receive their feedback based on the denotative meanings. This unavoidable gap occurs when using visual images, and linguistic tendencies can produce uncertainty when evaluating patient pain and risk responses.

My thesis used components of Aristotle’s appeals, or *pisteis*, *ethos* and *pathos* to describe the proofs that the forms and physicians require. Timothy Borchers stated, “Rhetoric examines persuasion, and persuasion must convince its listeners. Thus persuasion must use demonstrations, or proof” (2011). Pathos is defined as an appeal to emotion, and Aristotle believed that three questions must be answered to appeal to an audience: “What is their state of mind?,” “‘Against whom’ are the emotions directed?,” and “For ‘what sort of reasons’ do people feel the way they do?” (Borchers, 2011). Additionally, *ethos* is particularly vital to my study. *Ethos* is described as “the character of the speaker,” and necessitates three qualities of a speaker, or in this study, a physician: “practical wisdom, virtue, and good will,” or *phronesis*, *arete*, and *eunoia* (Borchers, 2011). These questions and qualities relate strongly to the personal nature of healthcare and describe what physicians should be asking their patients and what to consider to

establish strong rapport. The field is a sensitive one that requires individual attention, compassion, and trust. Essentially, the forms can cause a barrier in communication methods; not only do they provide a material roadblock that could distract patients from verbal communication. By focusing on asking patients to complete the forms without maintaining ethos and pathos, physicians could also be at danger of overlooking nonverbal cues, which are highly significant in high-risk settings, which could provide an opportunity to exaggerate or undermine levels of risk or pain.

Results: Close Reading

After analyzing each of the pain and risk assessment forms, I found benefits as well as flaws in rhetoric, communication, and research accuracy.

Numeric Pain Rating Scale

The Numeric Pain Rating Scale has one advantage: it transforms subjective information into numbers or logos, which means logic and objective facts. For instance, the numerical indicators are convenient as well as objective; for administrators, the numerical hash marks allow the form to be administered verbally. Numbers could be beneficial in getting the original, most accurate reading from a patient since less time is given to contemplate the best number to select. Objectively, the numbers give patients more frame of reference of where on the scale they should be selecting their pain level than the bare VAS. The NRS also gives strong frame of reference to the patient because of its center label titled “moderate pain”; less effort is required from the patient in regard to deciphering the range of the scale with the three written indicators, and more focus and energy is subsequently dedicated to pain consideration. All of these factors guarantee a step closer towards the best pain intensity rating, thus the most accurate prescription.

There are a number of disadvantages to the NRS. . The number system is a symbol system, and it makes it difficult to use objectively. The scale measures intensity, and the definition of this word asks a question concerning “extreme force, degree, or strength” according to the Oxford English Dictionary, which are terms easily connotated to a specific type of pain. However, while the form achieves its intent, the aim itself may be misdirected. According to a study by Hush, Refshauge, Sullivan, De Souza, and McAuley, “focus groups of patients with chronic back pain and symptomatic hip and knee osteoarthritis have found that the NPRS is inadequate in capturing the complexity and idiosyncratic nature of the pain experience or improvements due to symptom fluctuations” (2010). By focusing on intensity alone, connotations that lead patients to describe only this one facet of pain limit the variety of pain sensations they could be describing.

The next issue on the Numeric Pain Rating Scale relates to numbers rather than the language; pain is an aspect of pathos, or emotion, not logos, objective fact. Although number 0 and 10 have successful anchors to describe them, the patient is asked to quantify their pain without being allowed to elaborate. In the study “Pain Processing in the Human Nervous System: A Selective Review of Nociceptive and Biobehavioral Pathways,” Dr. Eric Garland stated, “The International Association for the Study of Pain has offered the following definition of pain: ‘Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage...’ Thus, pain has sensory and affective components, as well as a cognitive component reflected in the anticipation of future harm” (2012). This description illustrates the nature of pain and the idea that the experience is not always superficial, simple, or one-dimensional. The Numeric Pain

Rating Scale only targets pain intensity, which acknowledges one facet of pain without the opportunity for true pain description.

The Numeric Pain Rating Scale has rhetorical flaws that reject the semantics triangle theory that says symbols and signs are arbitrary. Using this theory, symbols are the words in the anchors and the numbers, thoughts are the associations made with the numbers 0 to 10 regarding pain, and the referents are the true pain levels of the patient. If you place these three components on the triangle diagram as seen below in Figure 1, the dotted line sits between the numbers/anchors and the true pain level.

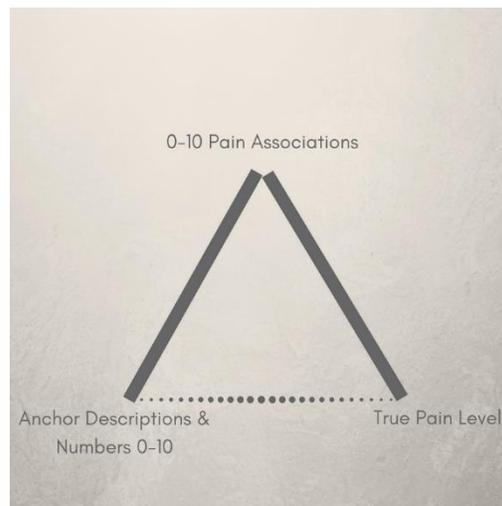


Figure 7. The Semiotic Triangle adapted to the Numeric Pain Rating Scale

Figure 7 displays the relationship dynamic when you add the forms to pain discourse. It is displayed that the thought, or the 0 to 10 associations, has a direct relationship with the true pain level of the patient; they are able to use the scale to measure what *they* believe their level is. There is another direct relationship shown between the thought and the symbol, or the anchors and numbers. Patients are also able to use these indicators to guide them in a range of 0 to 10. However, there is not a solid connection between the symbols and the referent, or the true pain level. The semantics

triangle illustrates the arbitrariness of symbols because even if everyone has the direct relationship concept between thoughts and what they see and feel, the associations between the symbols and the patient's actual pain cannot be measured by an outside source. Furthermore, while these connections are solid for each individual, each person has their own semantics triangle process, therefore making universal objectivity impossible.

Visual Analogue Scale

Some of the advantages of the Visual Analog Scale are results of its simple design, which helps make it a practical and efficient instrument. For instance, the VAS "is more sensitive to small changes than are simple descriptive ordinal scales in which symptoms are rated verbally," according to Physiopedia.org. Additionally, the language that is present on the primarily visual scale has caused minimal problems with translation to different languages.

However, there are disadvantages that pair with the positive, simple aspects of the Visual Analog Scale, particularly because it uses a sign system that could expose pain assessment to arbitrariness. Firstly, perhaps the most obvious conclusion to be made is its subjectivity. With no labels for frame of reference, it may be difficult for patients to gauge their pain level using the scale since there are no numbers displayed. If a patient receives the VAS, they may assume that the "no pain" anchor resembles a 0, and the "pain as bad as it could possibly be" anchor resembles a 10, but there is no way to be sure the patients don't think that the left end of the scale means *low* pain, not *no* pain. Because of the lack of reference, the measurement method would risk inaccurately matching the patient's idea of pain, and risks patients having a different concept of the scale's range

than the physicians who evaluate those levels to write appropriate prescriptions.

The VAS's subjectivity continues in patient population variation. For instance, visual learners with no cognitive impairments may be able to decipher the scale and use it to its full advantage, but patients who rely more on verbal or numerical reading styles may have difficulty in understanding how to use this pain assessment form.

Other issues are found in the inconsistency of downloading the form. If a physician does not acquire the appropriate VAS, the measurement of 100 mm could be inaccurate due to changes in formatting and size. Physical measurement of each form after printing would be required to ensure consistency across all VAS measurement methods.

Another disadvantage of the VAS concerns patients who need pain evaluation for the first time. It reduces pain assessment to a completed form instead of the complex experience it really is. The form can be used effectively for patients who have used the scale before to measure how their reported levels have changed; the reason it successfully monitors the change in pain level over time is because once a patient has completed the form once, they can form preconceived notions from their last evaluation to guide them. However, it does not hold this advantage for first-time patients because they have no frame of reference. The first consultation for pain measurement is crucial because it determines a patient's position and likely dictates the nature of the rest of their prescription plan. Furthermore, even for patients who have used the VAS before, their gauge of pain level may be inaccurate because of the first flaw. The patient's concept of pain may not constitute the same mark as a prescriber's, so there is no way to measure the true success of a patient's personal pain range associations.

Similar to the Numeric Pain Rating Scale, the Visual Analogue Scale uses the semantic triangle to retrieve pain information from patients. However, the VAS is lacking numbers and a center label, which does provide less symbols to decipher, but while that may mean there is less arbitrariness, it adds much more ambiguity. With no symbols to connect to a sensation (referent) or a concept of pain (thought), there are no limits to measure the intensity of the mark the patient draws. Symbols are necessary to complete the relationship between elements of meaning.

Pain Quality Assessment Scale

There are strong efforts behind the Pain Quality Assessment Scale to grasp the multidimensional nature of pain, mostly because it focuses communication between patients and providers onto a practical instrument—a form. The scale tests for many aspects of pain, and acknowledges that there are different levels in which the body experiences it. The top of the PQAS is successful in describing the nature of pain to patients, which can be helpful if the pain scales are considered a communication barrier; there is more context provided on the form itself for patients to refer to when answering the questions on the form. The PQAS's length and question styles prove that it attempts to assess patients individually while also trying to stay objective, which is lacking in the other forms.

While this form is the strongest of the five evaluated, it relies on a sign system, which opens up the interaction to arbitrary interpretation. While the questions were specific and well-informed, this advantage can also mean the form is difficult to translate to different languages. Although this difficulty can be considered a general issue with describing pain in other languages and not a limitation of the form alone, the other forms

were more easily adaptable to other languages than the PQAS.

Another flaw in the Pain Quality Assessment Scale is the lack of open-ended questions, which eliminates pathos, or emotion, from pain discussions in clinic. In the Neuropathic Pain Scale, from which the PQAS was adapted, question eight required an open-ended response from the patient. Although there was only one, that component was not included in the new version of the form. The reason for this disparity was likely that medical providers wanted to move away from subjectivity; however, question number eight not only allows patients to elaborate in their own words, but it provides guidance on what kind of pain, so the patient is not answering completely uninformed or without direction. This type of question would produce objective answers while also retrieving personal descriptions from patients, and by removing this question style, the Pain Quality Assessment Scale was weakened.

The last flaw in the PQAS form is that as a cool technology, it assumes too much of the patient. The issue begins in the instructions section on the first page. In the second paragraph, after it explains that it attempts to measure different aspects of pain, it reads, “Therefore, we expect you to rate very high on some of the scales below and very low on others.” This statement can be problematic; the best results for pain evaluation are received when a patient is honest and descriptive. By setting an expectation on the patients, it could pressure them to alter their responses if they’re concerned they do not meet that expectation initially. Furthermore, this information is appropriate for physicians to understand, but is not vital for patient knowledge.

The Pain Quality Assessment Scale’s flaws are related to Roland Barthes’ linguistic meaning theory of images. This document is thick with specific vocabulary

that, denotatively, would produce the most accurate results in determining patient pain. However, there is no way to regulate what connotative associations patients make with the language on the form. Connotative meanings “can conjure cultural images for the viewer,” which expels the largest advantage of the PQAS (Borchers, 2011).

Opioid Risk Tool

The advantages of the ORT are its specificity and sensitivity, which both could be interpreted as elements of *logos*. Each of the five categories—family history of substance abuse, personal history of substance abuse, age 16-45, history of preadolescent sexual abuse, and psychologic disease—are accurate determiners that a patient could abuse or depend on high-risk drugs, and this gives the form sensitivity. The questionnaire also has a short administration/scoring time of five minutes. It is also split into male and female tendencies, and men and women are both scored differently depending on each category, which grants specificity.

The Opioid Risk Tool has one main disadvantage compared to the advantages, mostly involving its *ethos*, or credibility, given its age. The tool could benefit from being researched further since its publication in 2005. A limitation to the ORT is that it does not account for other recent populations, such as non-binary or transgender patients. There may be a smaller history pool to pull data from in these cases, but the definitive nature of this form neglects that population. Similar issues occur in the “age” category—the ORT only scores for personal history of substance abuse for patients between 16 and 45, but according to a study done by the Substance Abuse and Mental Health Services Administration, “25% of older adults use prescription psychoactive medications that have a potential to be misused and abused” in 2015. In addition, SAMHSA found that

populations over 50 were more likely to use prescriptions for longer periods of time than younger populations, and this data correlates with a study called Sources of Prescription Opioid Pain Relievers by Frequency of Past-Year Nonmedical Use, which found that “Opioid pain relievers were obtained from other sources...with greater frequency as the reported days of nonmedical use increased” (Jones, 2014). In other words, the use of high-risk drugs used over longer periods of time can lead to addiction, and patients over 50 are likely to use long-term, prescribed high-risk drugs, which the ORT does not account for. It should be noted that Dr. Webster stated in the conclusion of her study that “further studies in a variety of pain and non-pain settings are needed to determine the ORT's universal applicability” (2005). However, there is no indication of further studies on the ORT forms since 2005.

The rhetorical disadvantages within the Opioid Risk tool can be defined by using Aristotle's *ethos* appeal. The most serious flaw is that the numbers assigned to the potential risk factors that rate their level of risk were inaccurately assigned. The ORT was last updated over ten years ago; its age violates the credibility of the form, as having updated information is crucial in the healthcare field. By using inaccurate scoring standards, physicians are prescribing based on outdated information that does not ensure the best medication plan. Additionally, identifying risk potential puts patients in a vulnerable position, and by using a form as the main method of obtaining this information is an impersonal approach that does not employ the three *ethos* qualities “practical wisdom, virtue, and good will.” Only an administrator could display these qualities, so it should be remembered that the ORT should only be used as a tool to assist this discourse.

CAGE-AID Questionnaire

There are benefits to the CAGE-AID form concerning the style of the questions and the evaluation score recommendation: the tool accepts subjective information, or pathos. These questions do not focus on physical pain, but rather target more subjective information and ask the patient how they feel emotionally about alcohol or drug abuse. In a study called “Conjoint screening questionnaires for alcohol and other drug abuse: criterion validity in a primary care practice,” it was concluded that the CAGE-AID Questionnaire was more sensitive “for subjects of varying sex, income, and level of education, as well as most patterns of substance use disorders” than its predecessor, the CAGE Questionnaire (Brown & Rounds). The questionnaire is also easily incorporated into an intake procedure, which facilitates the administration process (opioidrisk.org).

Although sensitivity is valuable in most patient assessments, it can also cause problems in specificity, which was another conclusion in the aforementioned study—the more pathos, the longer it takes for doctors to interpret data. Brown and Rounds found that the original CAGE Questionnaire was in fact more specific than the adapted version. Specificity is just as valuable from a physician’s perspective to determine the best fit prescription for individual patients.

There are further issues within the question style. The four questions are close-ended questions, for which the patient is asked to answer yes or no. This poses an issue limiting patients from further elaboration of a feeling or scenario they have experienced, since this form requires concise responses. If the goal of a physician is to remain objective, then they should acquire as much information from the patient as possible that could describe dangers of abuse when being evaluated for high-risk drugs or alcohol

disorders.

Another problem lies with the scoring method of the CAGE-AID form, which is a problem with many forms that try to turn pathos-oriented information into logos, or numerical data. At its foot, a disclaimer reads: “2/4 or greater = positive CAGE, further evaluation is indicated.” However, a study done by doctors Russell Portenoy and Perry Fine suggested that physicians should “be cautious in prescribing to a patient who answers yes to any one question. Individuals who answer yes to 2 or more questions should be subject to a psychosocial assessment prior to prescription” (2004). The discrepancy that one positive question is as significant as two positive questions proposes flaws in the form because it suggests that each of the questions on the CAGE-AID could raise concerns about substance abuse. If one issue signals a problem, it nullifies the 2/4 score recommendation listed on the form and creates ambiguity for physicians when determining a patient’s risk that could vary from clinic to clinic. Furthermore, it asks the question of why there needs to be further evaluation. Although Butler’s study made clear that “the purpose of screening is not necessarily to deny patients opioids for pain, but to identify those at higher risk so that they may receive more detailed assessment,” if a patient is at high risk based on the CAGE-AID evaluation, then the second evaluation should not be one for prescription opioids, but for other treatment options. These exceptions are not specified on the form. These highly sensitive answers are designed to identify “potential ambiguous drug-related behaviours that should trigger a re-evaluation by the clinician,” and earning a 2/4 should result in a “failing” of the assessment that does not lead to another opioid risk tool, but rather another medication altogether (Jovey, 2012). The current CAGE-AID form fails to instruct physicians on the second phase of

evaluation if needed, as well as inform patient of what “further evaluation” could mean.

The CAGE-AID is used today to evaluate risk potential regarding patient emotion, but it is important to remember the origin of the form to illustrate the theories it rejects. The CAGE-AID Questionnaire was not created for medical use, but instead for psychological evaluation concerning alcohol. When the form was adapted to include drugs, it became more useful in medical settings for determining risk factors. The form was also used initially for research purposes, not for patient use, so while the majority of the forms I studied encompass the pragmatic-dominant pattern of emphasis, the CAGE-AID does so exceedingly. The reason is because of the nature of the questions: they are close-ended and objective. It is clear that the creators of the form wanted highly specific responses without context or explanation. Thus, the administrator (the speaker) holds the highest importance, and they aimed to understand common prominent issues in the sphere of drug/alcohol abuse (the world) at the expense of patients who needed to be evaluated for high-risk medication (the listener). If a patient answers yes to two out of the four questions on the form, they are immediately waved to a second phase of “further evaluation.” This process likely funnels any additional detailed feedback to the next evaluation phase, so patients could be missing the opportunity to describe what they understand “annoyed” or “guilty” mean to them individually. These are vague terms, and account for two out of four questions, which could easily be the numbers patients quickly fail. There are different degrees of annoyance and guilt, and the close-ended questions suggest that the creators of the original form were not as interested in the unique experience of the patient, or listener. By providing open-ended questions with similar vocabulary to guide patient responses, the form would illustrate a social pattern of

emphasis and be more successful in evaluating risk potential.

Discussion

My results are that these five pain and risk evaluation forms are not effective mediums to achieve the most accurate measurements for this type of rhetoric. Due to the sensitive nature of medical discourse, prescribing high-risk medication should be an in-depth, detailed, personal conversation that these technologies are unable to perform alone because of their rhetorical flaws. The technologies are currently seen as forms of prosthesis, which gives them higher agency in the prescription process. Each of the forms violated at least one of the six rhetorical theories I presented.

The disadvantages significantly outweigh the advantages of the scales. The ratios of positive to negative aspects for the CAGE-AID Questionnaire, Visual Analogue Scale, and Opioid Risk Tool were each 2:4, and the ratios were 2:2 and 3:3 for the Numeric Pain Rating Scale and the Pain Quality Assessment Scale, respectively. Despite the ratios for the positive and negative features on the NRS and PQAS being equal, the weight of the disadvantages is greater than that of the advantages.

The most prominent issues that were present in all of the evaluation forms were overly direct questions, high levels of subjectivity, and lack of opportunities for elaboration. Along with this pattern, administration/scoring time was almost unanimously less than one minute, and this duration was listed as an advantage on the forms' websites—the Pain Quality Assessment Scale was the only one out of four that did not have this time, and it was additionally the strongest form.

Conclusion

The present patient pain and risk assessment resources utilize an impersonal

rhetoric that creates a communicative barrier between patient and doctor, ultimately rendering them insufficient in measuring patient pain and risk. In addition, the low-technologies are underdeveloped for high-risk scenarios, providing patients recurring opportunities to exaggerate pain level and requested duration. Using low technologies for high-risk scenarios in the medical field makes continued, uninformed drug abuse and long-term addiction common for patients through their physicians. Although the physician may be in the room with the patient while these forms are administered or may be asking questions, I believe the reliance on these technologies creates a barrier of safety for the patient from the doctor that could block questions and concerns about high-risk medication.

The ratios I created in my results were an attempt to quantify my findings, but much like measuring pain, there are other details to consider. For example, the NRS and PQAS, whose positive to negative ratios are equal, the severity of the disadvantages outweighs the positive factors. For instance, the NRS's goal is misguided, and this type of flaw would not transcend its advantages, such as the well-explained structure of the scale or the ability to translate it to other languages. Since the goal of the form is skewed, the results could be considered invalid. Similarly, the Pain Quality Assessment Form took a regressive step concerning pain and risk evaluation form improvement. As mentioned earlier in my analysis, these tools were originally created for research purposes and not for patients to complete. So, while the first sample pain and risk evaluation forms were promising examples, there is a need to personalize them and allow more opportunities to structure them to get the strongest feedback from each patient. Removing number 8 from the Neuropathic Pain Scale in hopes to be more objective robs patients the chance to

elaborate and describe their pain level on their own. The terms present in the question are an excellent example of how to give this chance to patients and also obtain targeted results, and that should have been preserved in the PQAS.

There are issues on the forms that point to them either to being too specific or too subjective. The overly subjective forms, while transcending language barriers and cognitive impairments, do not provide enough frame of reference for administrators and patients to share similar concepts of pain ranges. The forms that are too specific had language that would be difficult to translate to other languages or explain to patients with cognitive learning impairments, and ultimately impossible to avoid connotative associations and relate the intended denotative objectives. Close-ended, direct questions may result in the most specific results, but pain and risk cannot always be objectively summarized. The attempt to use these tools to optimize a medical appointment and gather patient pain and risk information quickly will likely fail, as the best determination of these factors would take specificity, communication, and clarification from both patients and physicians. The conversion from qualitative information to quantitative data is difficult, but there could be improvements to the method of acquiring patient information.

Pain is difficult to measure in any capacity. It can seem a fruitless effort to describe what the most successful pain or risk form would entail, as there has been no middle ground between subjectivity and specificity. However, the road to creating it can begin with more opportunities for patient elaboration. By simulating the Neuropathic Pain Scale (the original version of the PQAS), open-ended questions with the use of guiding vocabulary could produce detailed yet narrow results. Limiting responses to be tailored to standards that are easy to measure only limits the chance of capturing the true

pain and risk potential of an individual.

My findings indicate that although technology has a significant place in medicine, healthcare professionals should consider the time, place and manner of the type of care and technology in order to utilize technology only within its limits to preserve patient-doctor rapport and maintain the sensitive nature of the healthcare field.

Future Studies

Communication is a vital facet of healthcare, and the aforementioned rhetorical theories contain substantial points that would strengthen future versions of the pain and risk assessment forms. It is helpful to note that the current common forms being used were recently developed in the last 20 years, so the journey to creating the optimal pain and risk resources will result from analyzing the problems within these and improving them through the use of reliable rhetorical concepts. By adding some of these communication concepts, updating the research behind the scoring, and placing less confidence in these tools, they would improve drastically.

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