The Potentially Coercive Nature of Some Clinical Research Trial Acronyms*

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Study objectives: To evaluate the potential coerciveness of clinical research trial (CRT) acronyms, and to make clinicians aware that some CRT acronyms may be coercive to research subjects by subliminally enticing or outwardly promising something that the CRT may not be able to deliver.

Design: Analysis of CRT acronyms for pleasantness and meaningfulness as assessed by studies in the behavioral and social psychology literature.

Results: Of 2,383 acronyms for CRTs analyzed, 155 acronyms (6.5%) were assessed as possibly, probably, or almost certainly coercive. On a Likert scale from 1 to 5 for pleasantness or meaningfulness, the acronyms identified as almost certainly coercive had a mean pleasantness score of 4.21 (range, 3.70 to 4.57), the acronyms identified as probably coercive had a mean score of 3.79 (range, 2.45 to 5.00), and the acronyms identified as possibly coercive had a mean score of 3.89 (range, 2.81 to 5.00).

Conclusions: A distraught or frightened patient with a life-threatening illness who is offered a research study with an acronym of CURE, HOPE, HELP, IMPROVED, LIFE, RESCUE, MIRACL (sic), SAVED, or ALIVE is possibly being coerced by the acronym. Institutional review boards (IRBs) and the medical research community would not tolerate a CRT entitled, “A Surefire Cure for Cancer.” They should be no more tolerant of a CRT with an acronym listed above. It is time for researchers, sponsors, and IRBs to take a more responsible approach to potentially coercive CRT acronyms and discourage or prohibit their use.

Key words: acronyms; clinical research trial; coercion; inducement; institutional review board; research ethics; undue influence

Abbreviations: CRT = clinical research trial; DHHS = US Department of Health and Human Services; FDA = US Food and Drug Administration; IRB = institutional review board

Acronyms are intended to be pronounceable words generated from the first one or two letters of a series of words in a phrase or title. Acronyms are designed to simplify reference to and improve recall of the title. Common examples of acronyms in widespread use in the English language include radar for radio detecting and ranging, and scuba for self-contained underwater breathing apparatus.

Acronyms are increasingly being used in clinical research to abbreviate titles of studies. Other authors have discussed some of the problems with their use, including an exponential growth in their deployment, the perversion of the rules governing the creation and formulation of acronyms, and the duplicate use of some acronyms in multiple unrelated trials.

One problem that has not been addressed is the possibility that the acronym selected for a trial may be coercive to the research subjects by subliminally enticing or outwardly promising something that the trial may not be able to deliver. Coercion is defined by Webster’s dictionary as compelling one to an act or choice. We use the term coercion to include subconscious or subliminal pressure to choose or act.

Institutional review boards (IRBs) or research ethics committees are charged by the federal government with assessing the ethics of clinical research trials (CRTs). One of the issues that must be ad-
dressed is whether coercion or undue influence is involved in research subjects’ participation in a CRT.3,4

In their attempts to produce clever or witty acronyms, investigators may be subtly playing on the hopes or dreams of research subjects, a form of coercion. This study was designed to assess the degree and manner in which CRT acronyms may “cross the line” and become covertly or overtly coercive.

**Materials and Methods**

Medical articles and Internet sources of clinical trial acronyms, including the Medical Transcription Desk Clinical Trial Acronym List,5 Dr. Olga Shindler’s list of clinical trials in cardiology,6 National Institutes of Health7 and US Food and Drug Administration (FDA)-sponsored research trials, and MEDLINE, were searched for acronyms for CRTs. The best source was an article published by Cheng in the American Heart Journal.1

Acronyms were assessed for potential coercive effect by relating the acronym words to common usage and experience. CRT acronyms were then assessed for coerciveness by assessing their pleasantness and meaningfulness scores from the behavioral and social psychology literature. These studies6–12 scored common words on their pleasantness, imagery, meaningfulness or likeableness using a Likert scale. Bellezza et al10 used a 5-point Likert scale to rate pleasantness, with a score of 1 being very unpleasant and a score of 5 being very pleasant. Toglia and Battig9 Brown and Ure,11 and Paivio et al12 used a 7-point Likert scale to rate pleasantness or meaningfulness. The mean pleasantness and meaningfulness scores of these studies were converted to a 5-point scale for consistency. The assumption was that potential clinical research subjects, under duress from the diagnosis of a potentially life-threatening illness, when presented with a CRT acronym verbally and/or in writing, might have an outright or subliminal triggering from the acronym that would entice them to participate in the CRT.

No attempt was made to assess if the acronym word might have a meaning in a foreign language. Common usage was based on English-language meaning only. For example nonsense words, such as ISSI (Israeli Study of Surgical Infections), were treated as benign and noncoercive, whereas ALIVE (Adenosine Lidocaine Infarct zone Viability Enhancement trial) and CURE (Clodirogel in Unstable angina to prevent Recurrent Ischemic Events) were identified as definitely coercive. Common words that were neutral, such as COMET (Carvedilol Or Metoprolol European Trials) were also treated as noncoercive. Acronyms that might have significance in another culture or language such as ISIS (International Study of Infarct Survival)—ISIS is the Egyptian goddess of fertility—or OSHIS (Open Study of Infants at high risk or with Respiratory Insufficiency: the role of Surfactant) the Egyptian god of the Lower World, were also evaluated as noncoercive.

**Results**

Of the 2,383 acronyms for CRTs assessed, 155 acronyms (approximately 7%) were considered possibly, probably, or almost certainly coercive (Table 1). Some acronyms were used more than once for different CRTs, leaving 95 individual acronyms that were considered potentially coercive.

Of the 95 acronyms identified as objectionable because of potential coercion of research subjects, 75 or 78% were categorized as almost certainly or probably coercive rather than just possibly coercive. Of the 12 acronyms identified as almost certainly coercive, all 12 had been identified by Bellezza et al10 or Toglia and Battig9 as having high meaningfulness or pleasantness. With a score of 1 being very unpleasant and a score of 5 being very pleasant, the mean pleasantness for these 12 acronyms was 4.21 (range, 3.70 to 4.57). Thirty-two of the 63 probably coercive acronyms and 11 of the 20 possibly coercive acronyms also had been identified in the social psychology studies.6–12 The mean score of the 32 probably coercive acronyms was 3.79 (range, 2.45 to 5.00), and the 11 possibly coercive acronyms had a mean score of 3.89 (range, 2.81 to 5.00). There was no statistically significant difference in mean pleasantness scores between the probably and possible coercive acronyms, although the mean pleasantness score was significant at the p < 0.05 level for the almost certainly coercive acronyms (Student t test).

Only two trials had acronyms that were believed to have negative connotations and that might work in the reverse of coercion, by swaying potential re-

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<th>Table 1—CRT Acronyms Identified as Almost Certainly, Probably, or Possibly Coercive</th>
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<tr>
<td><strong>Almost certainly coercive</strong></td>
</tr>
<tr>
<td>ALIVE, CURE, HELP, HOPE, IMPROVED, LIFE, LIVE, MIRACL, MIRACLE, RESCUE, SAVE, SAVED</td>
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<td><strong>Probably coercive</strong></td>
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<td>ACCEPT, ACCORD, AMIABLE, APLAUSE, ASSENT, ASSURE, AWESOME, BESMART, BEST, BRAINS, BRILLIANT, CADILLAC, CARE, CASH, COURAGE, CHRISTMAS, DESIRE, ENDIT, ENTIICES, EXCITE, FAMOUS, FANTASTIC, FICSIT, FIRST, GENESIS, GRACE, GREAT, GUARANTEE, HALT-MI, HAPI, HERO, HOT, LAST, MAGIC, MICROHOPE, M-PATHY, MUST, NEAT, OPTIMAL, PEACE, PICNIC, PRAISE, PREVENT, PROGRESS, PROMISE, PROSPEER, PROTECT, PROVED, REDUCE, REGRESS, RENEWAL, RESTORE, SCORES, SMART, SOLVD, STOP, STOP IT, SUPPORT, TOPS, TREAT, TROPHY, U-CARE, VALID, VIGOUR, VITA, WELL-HART, ZEST</td>
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<tr>
<td><strong>Possibly coercive</strong></td>
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<tr>
<td>ACCORD, AMIABLE, APLAUSE, ATLAST, BIGMAC, BOSS, CABG PATCH, CHEAPER, CHEAPP, CHOICE, DRASTIC, ERA, FATIMA, GUSTO, ICARUS, KISS, NEET, NIRVANA, SMILE</td>
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search subjects away from participating. DEAD (Dying Experiences At Dartmouth) and DEATH (Dying Experience at the Hitchcock) did not seem to be enticing names for CRTs (1.47 and 1.85 on pleasantness scores, respectively).10,11

**DISCUSSION**

Coercion is a word that carries a negative connotation, especially in clinical research ethics, where the standard of good practice is that consent for participation in research should be freely given by the research subject. Anything that unfairly entices or forces a research subject to participate in a CRT is prohibited by various national and international research codes of ethics, including the Belmont Report, The International Ethical Guidelines for Biomedical Research Subjects, under the section “Voluntariness,” offers the following definitions:

An agreement to participate in research constitutes a valid consent only if voluntarily given. This element of informed consent requires conditions free of coercion and undue influence. Coercion occurs when an overt threat of harm is intentionally presented by one person to another in order to obtain compliance. Undue influence, by contrast, occurs through an offer of an excessive, unwarranted, inappropriate or improper reward or other overture in order to obtain compliance. Also, inducements that would ordinarily be acceptable may become undue influences if the subject is especially vulnerable.15

Based on the Belmont Report definitions, this article would be addressing undue influence rather than coercion. However, coercion can clearly be more subtle and subliminal than the threat of harm that the Belmont Report suggests.

The US Department of Health and Human Services (DHHS) Basic Policy for Protection of Human Research Subjects, under Section 46.116, entitled “General Requirements for Informed Consent,” states that “an investigator shall seek such consent only under circumstances that provide the prospective subject the representation of sufficient opportunity to consider whether or not to participate and that minimizes the possibility of coercion or undue influence.”13 The FDA policy on Protection of Human Subjects, under Section 50.20, “General Requirements for Informed Consent,” uses the same language as in the DHHS basic policy.4

The Council for International Organizations of Medical Sciences in its International Ethical Guidelines for Biomedical Research Involving Human Subjects, under Guideline 3, “Obligations of Investigators Regarding Informed Consent,” opines that the investigator has a duty to “…exclude the possibility of unjustified deception, undue influence and intimidation.”13

Subliminal enticement as examined in this study would be considered both deception and undue influence. Coercion can be overt, such as forcing prisoners to participate in research studies, or paying economically disadvantaged persons to be research subjects. Coercion may be more subtle, such as offering free medical care in exchange for participation in a research study, or making participating in a research study a prerequisite for gaining admission to an institution (the Willowbrook study).16 The infamous Willowbrook hepatitis study only accepted retarded children into the state school if their parents consented to having them participate in a research study where they were fed feces from other residents of the school who had active viral hepatitis, in order to study the epidemiology of hepatitis A.16 An even more subtle form of coercion is what has been demonstrated in this study—the words in the form of acronyms used to identify a CRT. Words can be very powerful, evoking emotional responses in the recipient. These acronyms can be clever, amusing, nonsensical, or enticing. The acronyms cross the line of propriety and become coercive when they trigger emotions, memories, or hopes that might subliminally sway a potential research subject to participate in a research trial. Advertisers use this technique to entice consumers with slogans, jingles, or catch-phrases. Such techniques should have no place in the realm of clinical medicine and clinical research.

In the fields of social and behavioral psychology, there is a well-known phenomenon called the automatic attitude activation effect, in which the mind evaluates and attaches positive or negative values to stimuli even before being conscious of the reaction.17,18 This automatic, unconscious perceptual interpretation of stimuli is known to influence deci-
sions and behavior on a preconscious level. The evidence for the automatic attitude activation effect comes from experiments in which researchers measured subjects’ immediate response to English-language words and nonsense words.\textsuperscript{9–12,17} Predictably, words such as “friend” and “holiday” elicited strong positive near-instantaneous reactions, whereas words such as “death” and “hatred” elicited negative responses. All words triggered some response, even nonsense words such as “juvalamu” and “bargalum.”\textsuperscript{19}

This effect is strategically applied in the fields of advertising and marketing, where names and words are used to elicit strong and hopefully positive associations, especially brand names.\textsuperscript{20} The concept is for the brand name to invoke favorable feelings and associations of which the consumer is unaware. Empirical evidence in both the social psychology and marketing literature attest to the ability of brand names to influence perception and choice. This effect has not been lost on the pharmaceutical industry, in which a key element of marketing and sales is name development and dissemination with the intent of creating an automatic attitude activation.\textsuperscript{21}

Some explanation of the coercive nature of some of the acronyms is warranted. Most acronyms determined to be probably coercive are self-explanatory. A distraught patient with a potentially life-threatening illness who is offered a research study with an acronym of CURE, HOPE, HELP, IMPROVED, LIFE, RESCUE, MIRACL (sic), SAVED, or ALIVE is being coerced. A patient who is offered a research trial with an acronym of ACCEPT, BESMART, DESIRE, or ASSENT is being pressured if not coerced.

A research study with an acronym of AWESOME, BEST, BRILLIANT, FAMOUS, FANTASTIC, GREAT, GUARANTEE, HAPI (sic), MUST, NEAT, OPTIMAAL, (sic), PROGRESS, PROVED, SMART, SOLVD (sic), TOPS, or VALID is probably promising more than it will deliver. The same could be said for CARE, HALT-MI, or WELL-HART. Even acronyms like COURAGE, HERO, and TROPHY can trigger a desire to participate in some potential research subjects.

Other acronyms are so engrained in the public from the advertising media that they can precipitate an emotional response or subliminal acceptance on the part of a prospective research participant. Acronyms such as BIG-MAC, CABG-PATCH, ERA (Equal Rights Amendment), CHRISTMAS, NIRVANA, and KISS are immediately recognizable and associated with positive connotations for a large portion of the population.

Even an acronym such as GUSTO has been indoctrinated into the public by beer commercials encouraging people to “go for the gusto” and “get all the gusto you can—you only go around once.” These media phrases and advertising slogans can subliminally influence research subjects even without their knowing or recalling why.

It is time for researchers, sponsors, and IRBs to take a more responsible approach to potentially coercive CRT acronyms and discourage or prohibit their use. As cute and clever as some of these acronyms are, they do little to improve communication. Although they reduce the length of articles, acronyms probably do not facilitate communication. Even though most clinicians are familiar with the SUPPORT, GUSTO, or GISSI studies, they probably cannot remember what the acronym stands for. The same is true for the common acronyms of scuba and radar in the general public.

Researchers and sponsors have clearly gone overboard in recent years in creating acronyms for CRTs. Not only have the number of acronym-named trials increased 10-fold over 6 years,\textsuperscript{1} but the distortions of the rules of creating acronyms have skyrocketed in attempts to create cute, clever, or catchy acronyms.\textsuperscript{2} ALIVE is created from AzimiLide post-Infarct survival evaluation, and SYMPHONY from sibrafiban vs aspirin to yield maximum protection for ischemic heart events post acute corOvary syndrome. Acronyms by grammatical convention are supposed to be created from the first one or two letters of the words in a phrase or title.\textsuperscript{2} Cheng\textsuperscript{1} claims that he knows of investigators who thought up clever acronyms first and then searched for suitable studies to match the acronym.

Two CRTs had what could be described as noncoercive acronyms. DEAD and DEATH were acronyms that patients and researchers were probably unlikely to use with any regularity. It is also predictable that research subjects were not enthused to enroll in CRTs entitled DEAD or DEATH.

Not everyone will agree with the particular acronyms that were characterized as probably or possibly coercive. Some may not agree that PROGRESS or PROSPER are probably coercive, and others may not feel that MEET or DRASTIC could possibly be coercive. Hopefully, everyone will agree that words can be powerful, and that in some situations or some instances the acronym chosen for a CRT could be enticing or coercive to a prospective research subject. Researchers and potential subjects should choose a CRT based on clinical factors and the prospect that the CRT may be beneficial for either the subject or generalizable knowledge, not because the CRT has a cute or clever acronym. Not everyone will feel that acronyms for CRTs are a major problem if only 7% of studies had possibly, probably, or
almost certainly coercive acronyms. However, these authors believe that even a single coercive CRT acronym is too many.

One drawback to this study is that the social-psychology studies used to assess the acronym words for meaningfulness or pleasantness employed college students. Although both genders were used, there were distinct gender differences in the meanings attached to some words. Obviously, emotional assessment of words may vary by ethnicity, education, gender, and socioeconomic status. As such, there is a possible bias in using these social-psychology studies to assess the coerciveness of acronym words.

Long, unwieldy names for CRTs are cumbersome to recite and difficult to remember. Acronyms may ease this burden, but care must be taken that the acronyms do not take on a life of their own, enticing researchers and subjects and appearing to promise more than they can deliver. As Berkowitz pointed out, acronyms for CRTs have a number of legitimate purposes. From a pragmatic standpoint, they function to shorten complex trial names and titles into forms that save space, time, and effort for writers, publishers, and information users. Acronyms have important heuristic and mnemonic functions, helping researchers recall and convey vast amounts of complex information (study questions, methods, population, results) in a brief reference that facilitates recall. They also have a symbolic usefulness, unifying distant and diverse collaborators under a single umbrella name that gives them a common purpose and identity. They also serve an expressive role, offering investigators a rare opportunity to express a playful side with the ability to express creativity in the otherwise disciplined business of scientific research. Not totally lost on Berkowitz was the dark side of the use of acronyms. He refers to the provocative and evocative meanings of acronyms and the ability of these words to stimulate associations and affect that could influence the perceptions of researchers and study subjects. He refers to the association power of these words to convey pleasing emotions and the promises of healing actions. As Berkowitz states, “These examples demonstrate that trial names can at times be as subtle as a billboard and reflect a bid for attention that goes beyond the clever and casual.” Berkowitz concludes that, “A good name may indeed be ‘better than riches,’ but if a growing strategy of personal or proprietary enrichment lies behind the spread of research acronyms, we might do well to consider whose interests this ‘branding’ of research really serves.”

What should the research community and IRBs do? At the very least, the acronyms (especially potentially coercive ones) should not be part of the informed consent or other material given to potential study subjects. Potentially coercive CRT acronyms should not be displayed in public areas or advertised to the public. Some might argue that IRBs should weigh potentially biasing CRT acronyms against the risks of participation, with more bias permitted in the acronym if there is less risk to the study. The problems with this approach are assessing the degree of bias since some acronyms may be enticing to some individuals and not to others, and assessing the degree of risk to the research subject. Although some research is clearly minimal risk as defined by DHHS and FDA, most research involving pharmaceuticals and devices is of unknown risk and must be assumed to be more than minimal. Attaching a degree of risk to those more-than-minimal risk studies is probably not possible.

Inducements to participate in CRTs have a sordid history. The infamous Tuskegee Syphilis Study of the US Public Health Service enlisted lower-socioeconomic-class black men with the promise of free medical care. Diagnostic lumbar punctures were explained as therapeutic to the research subjects. When a cure for syphilis became widely available, these research subjects were never told of the beneficial treatment in order to continue to study them. The Willowbrook hepatitis studies used admission to a crowded state school for the retarded as the inducement to coerce parents into enrolling their children in the CRT. Professors have coerced students in their classroom to participate in research studies with the promise of a better grade or the threat of a lower grade for nonparticipants. Clinical researchers have used the same techniques on interns, residents, and nurses on their service.

Some inducements to participate in CRTs are common place and considered acceptable. Compensating research subjects for time, travel, and inconvenience is often employed when research subjects must return to the research site for follow-up. The compensation is used to improve compliance with follow-up. Nonbeneficial research on healthy subjects often uses a financial inducement to attract volunteers. Research involving children, especially when nontherapeutic, may include a gift certificate to a toy store to induce cooperativeness on the part of the child. IRBs are charged by the federal government with assessing these inducements to ensure that they do not cross the line and become undue enticements. IRBs usually assess the acceptability of these inducements based on the amount of the compensation and the vulnerability of the research subjects.

IRBs and the research community would not tolerate a CRT entitled, “A Surefire Cure for Cancer.” They should be no more tolerant of a CRT whose acronym is CURE. It is time for researchers,
sponsors, and IRBs to take a more responsible approach to potentially coercive CRT acronyms and discourage or prohibit their use.

REFERENCES
2 French PA, Ohman EM. The abbreviated life of acronyms [editorial]. Am Heart J 1999; 137:577–578