FOUND IN TRANSLATION

SearCh for humourIstic and Extravagant acroNyms and Thoroughly Inappropriate names For Important Clinical trials (SCIENTIFIC): qualitative and quantitative systematic study

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OBJECTIVES To describe the development of acronym use across five major medical specialties and to evaluate the technical and aesthetic quality of the acronyms.

DESIGN Acronyms obtained through a literature search of Pubmed.gov followed by a standardised assessment of acronym quality (BEAUTY and CHEATING criteria).

PARTICIPANTS Randomised controlled trials within psychiatry, rheumatology, pulmonary medicine, endocrinology, and cardiology published between 2000 and 2012.

MAIN OUTCOME MEASURES Prevalence proportion of acronyms and composite quality score for acronyms over time.

RESULTS 14 965 publications were identified, of which 18.3% (n=2737) contained an acronym in the title. Acronym use was more common among cardiological studies than among the other four medical specialties (40% *v* 8-15% in 2012, P<0.001). Except for within cardiology, the prevalence of acronyms increased over time, with the average prevalence proportion among the remaining four specialties increasing from 4.0% to 12.4% from 2000 to 2012 (P<0.001). The median combined acronym quality score decreased significantly over the study period (P<0.001), from a median 9.25 in 2000 to 5.50 in 2012.

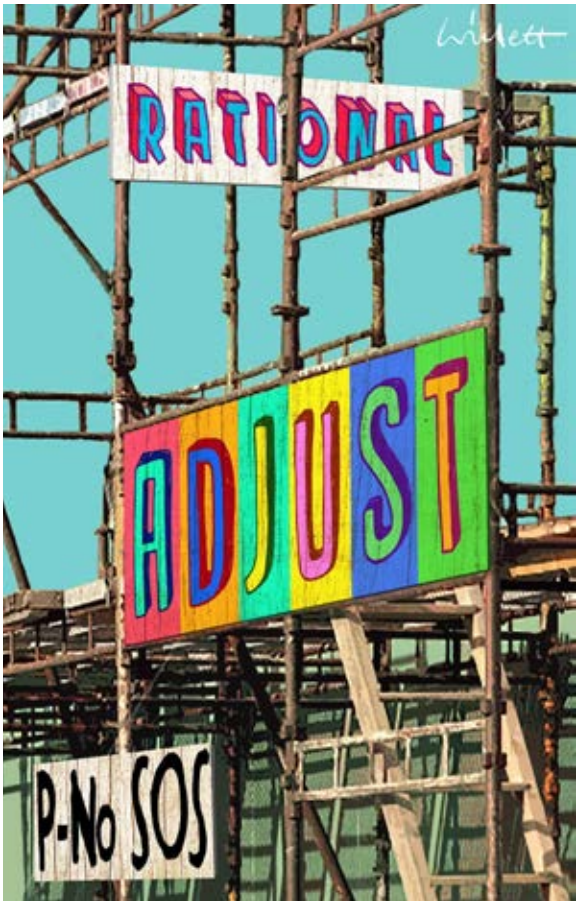
CONCLUSION From 2000 to 2012 the prevalence of acronyms in trial reports increased, coinciding with a substantial decrease in the technical and aesthetic quality of the acronyms. Strict enforcement of current guidelines on acronym construction by journal editors is necessary to ensure the proper use of acronyms in the future.

Authors have asserted that positive sounding acronyms are misused in clinical trials with negative outcomes

Introduction

Acronyms—abbreviations formed from the initial components of a phrase or word[1]—improve the perception of complex, written information.[2 3] Within the health sciences, researchers' use of acronyms holds a long tradition, with the likely intention of branding their work into the minds of fellow researchers, clinicians, editors, or lay people.[4]

The use of acronyms in health sciences has been subject to intense debate.[5] Authors have advocated against such use as they claim it has turned into MMMMM—a major malady of modern medical miscommunication[6]—and asserted that positive sounding acronyms are misused in clinical trials with negative outcomes.[7 8] It has been suggested that editors should insist on eliminating the use of positive sounding



acronyms[9] or even bring a HALT (help acronyms leave (medical) trials) to the use of acronyms altogether.[10]

This heated controversy seems to be based on opinion rather than founded on rigorous scientific research. Few quantitative studies of this important topic exist, and to our knowledge studies on the technical and aesthetic quality of acronyms are virtually absent. We describe the extent and quality of acronym use within different medical specialties.

Methods

We included five major medical specialties in the analysis: cardiology, endocrinology, rheumatology, pulmonary medicine, and psychiatry. For each specialty we selected a disease that was central to the discipline and identified the

Table | Five best and five worst acronyms according to composite BEAUTY and CHEATING criteria (see web for details of scoring)

Total score	Acronym	Full name*	Specialty	Publication year	Impact factor	No of citations†	Citations /year†
22.0	PREDICTIVE	Predictable Results and Experience in Diabetes through Intensification and Control to Target: An International Variability Evaluation	EN	2008	31.7	28	4.7
20.5	PERISCOPE	Pioglitazone Effect on Regression of Intravascular Sonographic Coronary Obstruction Prospective Evaluation	EN	2008	31.7	375	53.6
19.5	IMMEDIATE	Immediate Myocardial Metabolic Enhancement During Initial Assessment and Treatment in Emergency care	CA	2012	30.0	44	14.7
18.5	PRECISION	Prospective Randomized Evaluation of Celecoxib Integrated Safety versus Ibuprofen Or Naproxen	CA	2009	4.4	36	6.0
18.0	BARRICADE	Barrier approach to restenosis: restrict intima to curtail adverse events	CA	2011	6.8	10	2.5
−13.5	POLMIDES	Prospective randomised pilOt study evaLuating the safety and efficacy of hybrid revascularisation in MultI-vessel coronary artery DisEaSe	CA	2011	0.5	2	0.5
−14.5	T-VENTURE	Inhibitory effect of valsartan against progression of lefT VENTricUlaR dysfunction aftEr myocardial infarction	CA	2009	2.7	11	1.8
−16.5	TYPHOON	Trial to assess the use of the CYPHer sirolimus-eluting coronary stent in acute myocardial infarction treated with BallOON angioplasty	CA	2011	6.8	50	12.5
−18.0	PERFORM	Prevention of cerebrovascular and cardiovascular Events of ischaemic origin with teRutroban in patients with a history oF ischaemic strOke or tRansient ischaeMic attack	CA	2011	38.3	68	17.0
−18.0	METGO	A 48-week, randomized, double-blind, double-observer, placebo-controlled multicenter trial of combination METhotrexate and intramuscular GOld therapy in rheumatoid arthritis: results of the METGO study	RH	2005	7.4	57	5.7

CA=cardiology; EN=endocrinology; PU=pulmonary medicine; PS=psychiatry.
*Capitalisation is identical to that done by authors of single study.
†Source: Web of Knowledge.[14]

The evaluation consisted of both positive (BEAUTY, Boosting Elegant Acronyms Using a Tally Yardstick) and negative (CHEATING, obsCure and awkHward usE of lettArs Trying to spell somethING) criteria

most appropriate MeSH term for that disease. Using these MeSH terms, we searched PubMed for studies containing acronyms in their title that did not refer to a method (for example, randomised controlled trial). We restricted the search to randomised controlled trials in humans, reported in English, and published during 2000-12.

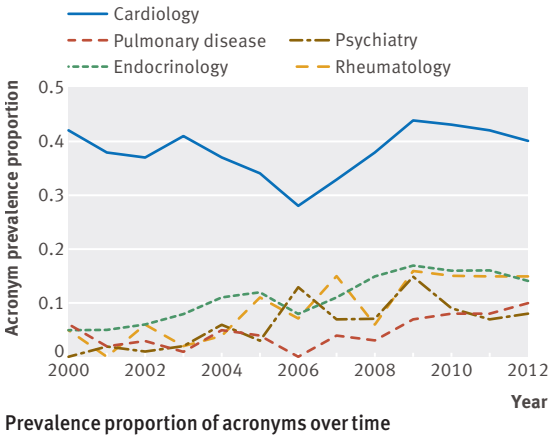
Acronym evaluation

The evaluation consisted of both positive (BEAUTY, Boosting Elegant Acronyms Using a Tally Yardstick) and negative (CHEATING, obsCure and awkHward usE of lettArs Trying to spell somethING) criteria (box online). We used a two step Delphi method to agree on these criteria.[11] The final score assigned to each acronym was obtained by adding the BEAUTY and CHEATING score.

Results

A total of 14 965 publications were identified, most within the disciplines of cardiology (n=5063) and endocrinology (n=4994). Overall, 18.3% (n=2737) of the publications contained a total of 1149 unique acronyms. The prevalence proportion of acronyms increased over time for all specialties, except for cardiology (P<0.01, figure).

Excluding 197 acronyms where we could not identify the full meaning, 952 acronyms underwent further evaluation.



Prevalence proportion of acronyms over time

The median quality score was 6.5, with scores ranging from −18 to 22 (interquartile range 3.0-10.5). The table presents the highest and lowest scoring acronyms.

Discussion

This quantitative and qualitative systematic study showed an increasing use of acronyms in the manuscript titles of four major medical specialties coinciding with a noticeable decline in the quality of the acronyms over time.

Cardiologists' obsession with acronyms is well documented and has been the subject of in-depth analysis.[6 8 15-18] Although the "10 commandments of acronymology" was suggested in 2003,[6] these were never formally adopted by any cardiological society. No biologically plausible reason explains the apparent obsession with acronyms in cardiology. It may be hypothesised that fierce academic competition spurred the origin of such use, and that new researchers have been subject to peer pressure and assigned acronyms at all cost to avoid academic marginalisation and ridicule. Another hypothesis is a reversal of the process: cardiologists may first concoct a clever acronym and then design a trial to fit it.

Studies with good acronyms had more citations than studies with poor acronyms. For manuscript titles with good acronyms we observed a non-significant trend towards publication in journals with a higher impact factor. Bibliometric assessment of academic production is closely associated with successful funding,[19 20] as well as personal satisfaction, pride, and peer prestige of researchers.[21-23] In line with our findings, a study found that using an acronym was associated with a twofold increase in annual citation rate.[24]

The prevalence of acronyms in reports on clinical trials is increasing at the expense of their semantic and aesthetic quality. Given the academic importance of acronyms, we are surprised by the lack of effort dedicated to their construction. The growth of acronym use, especially those of poor quality, should be resisted.[27] We believe that strict governance of current guidelines by journal editors will result in an aesthetic improvement and better use of acronyms.

Competing interests and references are on thebmj.com.

Accuracy of Google Translate in medical communication

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A complex and nuanced medical, ethical, and treatment discussion with patients whose knowledge of the local language is inadequate remains challenging.

We recently treated a very sick child in our paediatric intensive care unit. The parents did not speak English, and there were no human translators available. Reluctantly we resorted to a web based translation tool. We were uncertain whether Google Translate was accurately translating our complex medical phrases.[3 4] Fortunately our patient recovered, and a human translator later reassured us that we had conveyed information accurately.

We aimed to evaluate the accuracy and usefulness of Google Translate in translating common English medical statements.

Methods

Ten commonly used medical statements were chosen by author consensus. These were translated via Google Translate to 26 languages. Translations only were sent to native speakers of each of these languages and translated back to English by them. The returned English phrases were compared with the originals and assessed for meaning. If translations did not make sense or were factually incorrect they were considered as wrong. Minor grammatical errors were allowed.

In today's world "just Google it" is considered to be the answer to everything, but for health related questions this should be treated with caution

Results

Ten medical phrases were evaluated in 26 languages (8 Western European, 5 Eastern European, 11 Asian, and 2 African), giving 260 translated phrases. Of the total translations, 150 (57.7%) were correct while 110 (42.3%) were wrong. African languages scored lowest (45% correct), followed by Asian languages (46%), Eastern European next with 62%, and Western European languages were most accurate at 74%. The medical phrase that was best translated across all languages was "Your husband has the opportunity to donate his organs" (88.5%), while "Your child has been fitting" was translated accurately in only 7.7% (table). Swahili scored lowest with only 10% correct, while Portuguese scored highest at 90%.

There were some serious errors. For instance, "Your child is fitting" translated in Swahili to "Your child is dead." In Polish "Your husband has the opportunity to donate his organs" translated to "Your husband can donate his tools." In Marathi "Your husband had a cardiac arrest" translated to "Your husband had an imprisonment of heart." "Your wife needs to be ventilated" in Bengali translated to "Your wife wind movement needed."

Discussion

Google Translate is an easily available free online machine translation tool for 80 languages worldwide.[5] However, we have found limited usefulness for medical phrases used in communications between patients and doctor.[3 6 7]

We found many translations that were completely wrong. Google Translate uses statistical matching to translate rather than a dictionary/grammar rules approach, which leaves it open to nonsensical results.[4 8]

In today's world "just Google it" is considered to be the answer to everything, but for health related questions this should be treated with caution.[9] Google Translate should not be used for taking consent for surgery, procedures, or research from patients or relatives unless all avenues to find a human translator have been exhausted, and the procedure is clinically urgent. We have, however, not assessed the accuracy of human translators, who cannot be assumed to be perfect and may be subject to confidentiality breaches.

Competing interests and references are on thebmj.com.

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DUNCAN SMITH

List of medical phrases translated via Google Translate

Phrase translated	Sample or most common error	Percentage correct
Your wife is stable	Your wife cannot fall over	53.8
Your husband had a cardiac arrest	Your husband's heart was imprisoned	53.8
Your husband had a heart attack	Your husband's heart was attacked	73.1
Your wife needs to be ventilated	Your wife needs to be aired	26.9
Your child's condition is life threatening	Your child's state is not life stopping	69.2
Your child has been fitting	Your child has been constructing	7.7
Your child will be born premature	Your child is sleeping early	76.9
Your husband has the opportunity to donate his organs	Your husband is now ready to donate	88.5
We will need your consent for operation	We need your consent for operating (such as machinery)	61.5
Did he have high fever at home?	Your home temperature was high	65.4

English as she is mis-spoke, misread, and miswrote—or, why you should read before you sign

Suresh Ramnath shares some of his favorite transcription errors

Over the years, I have been amused by how my neurosurgical notes were transcribed. "Losing conciseness" occurs when you descend into a "sinkable episode," sometimes with loss of "conscientiousness." It can be accompanied by disorders of "morality of sensation," such as loss of "radiation." Some patients describe a "puritan" sensation.

Many are "neurotically" intact but have pain in the "psychiatric nerve." Examination is confounded by ulnar "innovated" muscles "immutable" to surgical "enervation." These changes can be "post-dramatic" in patients who sustained "mortal" (mortar) wounds. Pain can be caused by a herniated nucleus "papoose," and when multiple, "nucleus populous." In the arm, the problem may be brachial "perplexus." Leg pain is often localized to the greater "true cantor," although no patient has sung its praises, or only after emptying a greater "decanter." Pain can reside in "fibromalaysia" or in a "diffuse manor."

Burning the nurse

The elite never have "low class tenderness." On postoperative scans, the neural foramina may be "devastated." Pain can be treated using "non-sterile" drugs. Do not return to the pain specialist who "burned the nurse" in the low back.

Patients have had "grandma" seizures. "Anti-convalescent" drugs must never be prescribed. Gait has been described as "semitic," and some have an "interior tremor." Scans of "non-cephalic" skulls may show abnormality in the "biennial" region. "Lower chimney" weakness, together with "balance confidence" and even "urgent continence," and "rectal dysfunction" may accompany cord compression. Patients are sometimes "cooperative to osculation," with lungs also clear to "osculation" after "ammonia" has cleared. You need a chaperone when "illiciting deep tender reflexes" or evaluating "undistended" testicles or "varicose cells." Neck pain can be unresponsive to "intimate cervical traction" (chaperone again). There may be "mild exenteration" of cervical lordosis.

Hemostasis can be obtained with "prominence-soaked" gelfoam. Some are allergic to "corrosion," or infected with Epstein-Barr "wire" or had "buttocks"

Only male chauvinists may evaluate "misogynous" leukemia, and beware the woman with "tubal litigation"

injection for facial spasm. Injuries can result in "new creation of an eye."

I was pleased with the "visit for enjoyment with foot drop requiring juice of an AFO." Some patients can "heal walk." Postoperative changes can arise from a hip "autographed" (celebrities only), or even hypertrophic "fascists."

"Periodontal cysts" may masquerade as pilonidal cysts. Only male chauvinists may evaluate "misogynous" leukemia, and beware the woman with "tubal litigation." Pituitary neoplasms may have "new onset of depression and impudence." Some neoplasms have "metabolized into cancer." "Outlying phosphates" must be checked away from metropolitan centers.

"Final wrecks" are pending a "recital" exam, after the fat lady sings.

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Read before signing

Go to thebmj.com for these bonus Christmas features

Mortality of first world war NZ soldiers

Researchers looked at the impact of the first world war on the lifespan of participating military personnel. They did this by comparing the survival of soldiers who embarked on troopships in 1914 with that of a non-combat cohort who embarked in late 1918. Surviving the war didn't mean surviving its effects on overall mortality. Veterans who returned from the war lived on average 1.7 years less than than soldiers who escaped combat.

BMJ 2014;349:g7168

"Weekend effect" also in palliative care?

The "weekend effect" describes an increase in inpatient hospital mortality at weekends and on public holidays. It's usually attributed to lower availability of emergency procedures and senior staff at these times. But it may be a feature of life (and death) on palliative care units, too. This study found mortality was 18% higher at weekends and on public holidays than that on working days. The reasons remain a mystery.

BMJ 2014;349:g7370

A Christmas Carousel

In this roundabout tale of health funding irregularities in Dickensian times, Grinding Poverty meets Blind Affluence. Eversneezer Scrounge, the Minister of Rude Health, espouses the politics of austerity for personal gain. His trusty clerk, Bob Scratchit, strives to negotiate increased funding, most especially for his ailing son, Tiny Budget. Three ghosts appear to Scrounge, but offer less than full-bodied assistance on Health Matters…

BMJ 2014;349:g7344

VIDEO

Captain Webb's legacy

The Serpentine Swimming Club braves the perils of the sea, largely unchanged since Webb swum the English Channel in 1875

PODCAST

BMJ Confidential

Some of the first subjects discuss their pet hates with Annabel Ferriman

POLL

Which BMJ Confidential "pet hate" do you most share?

ANIMATION

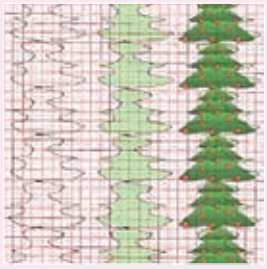
Where does the fat go?

See this ingenious explanation

NINTENDO-RELATED INJURIES

A literature review unearthed 38 case reports and case series. Injuries and complaints range from neurological and psychological to various surgical problems, but most of the problems are very mild. Given that their prevalence is so low, the authors conclude that "All in all, playing a Nintendo is relatively safe."

BMJ 2014;349:g7267



CHRISTMAS TREE SIGN (FOR ECG CONNOISSEURS)

The elderly patient had palpitations and dizziness. His ECG was difficult to interpret. Then his doctors did something to the rhythm strip, and everything became clear.

BMJ 2014;349:g7342

HAVE YOUR SAY

MAKING MUSIC IN THE OPERATING THEATRE (p 3)

What music do you play?

Submit your playlist via an online rapid response to this article

CHRISTMAS DINNER FOR DOCTORS ON DUTY (p 38)

Did your hospital provide a Christmas meal for medical staff on call?

If you can't find your hospital on Emma Gosnell's list, send us an online rapid response to tell us what it provided.

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