

WRITING GOOD ABSTRACTS†

IT'S A TOUGH JOB

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Why does it seem to be so difficult to write a good abstract? King and Roland provide an insight to the problem in their book, *Scientific Writing*: "Most authors find it quite easy to write a long essay, more difficult to write a short essay, and much more difficult to write a short *good* essay."¹ A well-written essay of 250 words or less can become an excellent abstract, but it is a difficult task to accomplish. According to M. Therese Southgate, MD, abstract writers should not allow themselves to become too easily discouraged. In an editorial in JAMA, Journal of the American Medical Association, in 1972, she wrote: "The composition of the synopsis-abstract is often a cross check of the quality of the report and even of the work; it being next to impossible to write a good abstract from a poorly written article."²

The editorial board of *Physical Therapy* recognizes the importance of publishing journal abstracts monthly in order to help physical therapists keep up with the ever-rising tide of literature in the medical professions. Abstractors for *Physical Therapy* volunteer their services, meaning that they also have expressed an interest in helping physical therapists to stay informed. While serving as an APTA Intern in Publications recently, I observed that, sadly enough, a majority of the large number of abstracts which are received by the Journal office are not acceptable for publication as submitted. The problem is rarely one of poor-quality research; the problem is the poor writing techniques of the abstractors. All too frequently mistakes occur in organization and wording, such as this sentence: "Of thirty-five patients treated by this method, six went to necrosis but only four required replacement."

Abstracts of current literature are important to many of us, yet it seems that many of our abstractors are not yet really able to communicate new information to us in a meaningful fashion. This article summarizes the principles of good abstracting with the hope that some of our abstractors will be able to use the suggestions to improve their writing skills. The principles described can also be applied by those considering abstracting articles for their personal files. Skill in determining the essence of any report is a valuable time-saver and is also a talent which any budding writer should cultivate.

WHAT IS AN ABSTRACT?

A journal abstract functions as a brief description of the contents of an article so that the busy therapist can quickly grasp the "meat" of the article. According to Lois DeBakey in her book, *The Scientific Journal*, a journal abstract is distinguished from a summary by the fact that it stands apart from the original article.

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Dr. DeBakey writes: "Because these abstracts stand apart from the original article, they should be completely self-contained, and sometimes, therefore, may include more information than (concurrent author abstracts)." King and Roland further clarify the nature of the journal abstract by reminding us that a good abstract "preserves the form of the paper in miniature" and never contains material which is *not* in the paper, such as the criticisms or opinions of the abstractor.¹

TECHNIQUE

What does one do when writing an abstract? Maizell, Smith, and Singer suggest that the abstractor should begin with a quick preliminary scan of the article, noting the subject matter and length and special features such as tables, illustrations, or references. A second very careful reading should focus on reading the first and last paragraphs, reading key sections, and underlining key words and phrases in the article.³ At this point, the abstractor has two choices: to extract or to paraphrase. Generally the paraphrase, written in the past tense, is the more effective and widely used choice of style for a journal abstract. Extracts are simply selected quotations from the article. Extracts may be appropriate if used as a supplement to paraphrases or if the article is a literature survey and not a research report.

Whatever the choice of writing style, most abstractors prefer to write their rough drafts with a full copy of the article before them. The final step is to put the abstract away and reread it a few hours or a few days later. Final copy should be typed according to the requirements of the *Style Manual* of the American Physical Therapy Association (APTA).⁴ When doing the final reading, the abstractor must ponder the question, "Can I understand what this article is all about from what is written here?" If the answer is "No", *Physical Therapy* readers will not be able to understand the abstract either.

CONTENT

According to the APTA *Style Manual* an abstract should contain no more than 250 words.⁵ Generally fewer words are needed to adequately describe an article. Dr. Southgate's editorial summarizes the matter of content concisely, citing four questions which the abstractor must ask: (1) What was the problem? (Problem); (2) How was it solved? (Method); (3) What was found? (Results); (4) What was learned? (Conclusions).²

No more than one sentence is usually needed to answer each question. The order in which these essential items are written does not matter, although it is a good idea to generally follow the order in which they occur in the article being abstracted. A good abstract is a collection of facts, not generalities. Such lead-in phrases as "The authors concluded . . ." are deadwood in an abstract. It is better to simply say "The conclusions were . . ."

The four essential questions also apply to articles which are literature surveys. To illustrate: The *problem*

may have been to find out what has been written in the past 20 years about cervical traction. The *method* may have been to review the literature (mentioning well-known authors). The *results* may have been to discover that little documentation exists on the basis for treating cervical spine problems with motorized intermittent traction in the sitting position. The *conclusion* may have been that research on applying cervical traction, or on the effects of applying cervical traction in the sitting position, is needed.

Some specific facts which need to be included in an abstract of a research article are (1) the number and characteristics of experimental subjects; (2) the full names of any standard tests or statistical methods used; (3) the full names of any apparatus used; and (4) the generic names, if possible, of any drugs used.⁸

Last, but certainly not least, the abstractor must select facts for inclusion in the abstract which are pertinent to the field of physical therapy. There is no place in the journal abstract for a personal critique by the abstractor of the article's applicability to the physical therapy profession, but it is entirely ethical and necessary to choose and orient the facts presented to our profession. The readers themselves must decide whether an article is pertinent and worth a closer reading. After all, isn't that the *real* reason for publishing journal abstracts?

STYLE

Maizell, Singer, and Smith remind us that the lead sentence of the abstract is very important, and should give the "gist" of the article.⁴ A clear, concise style is a necessity if an abstract is to be limited to one sentence about each of the four essential questions (problem, method, results, conclusions). Abstractors should discard jargon from the original article; for example, a "spinal cord injured patient" is really a "patient with a spinal cord injury." Generally the past tense is required for verbs. Strong and precise language helps the reader to understand the importance of the content of the abstract. All abbreviations used should be spelled out the first time they appear in the text and followed by the abbreviation in parentheses.

EXAMPLES

The following two abstracts fulfil most of the requirements for good quality which have been cited here:

Factors previously associated with motor neuron disease were compared in 25 patients with amyotrophic lateral sclerosis (ALS), 25 patients with other neurologic diseases, and 25 normal control subjects. A standard form was used to record exposure to metals, athletic participation, milk ingestion, childhood and adult illnesses, bone fractures, malabsorption, trauma, electric shock, hypoglycemia, and other factors. Groups were matched for age and sex.

The ALS group had a significantly higher number of patients who reported exposure to heavy metals, participation in athletics, and ingestion of large quantities of milk. The authors postulated that ALS patients may have genetically determined dysfunction in motor neuron metabolism which is made worse by environmental factors or by motor neuron fatigue.¹

Electrophysiologic studies were performed on 17 patients who had pre-existing uremic neuropathy and

had successful kidney transplants. Clinical signs before transplantation ranged from mild to severe and included distal weakness, reduction of tendon reflexes, numbness and tingling, and loss of vibratory sense and two-point discrimination. Electrophysiologic signs correlated well with clinical symptoms. Sensory and motor conduction velocities were decreased and muscle compound action potentials were depressed.

Improvement in clinical signs began within two months after transplantation. Mild neuropathies showed complete clinical recovery in six months, while moderate to severe neuropathies showed continued improvement for as long as two years. Conduction velocity did not show significant improvement within two months, but, in the two-year follow-up, sustained increase in motor and sensory conduction velocity was noted.

Four patients required a second transplant with similar improvement in clinical and electrophysiologic signs.⁸

We may infer from the second abstract that the authors did not attempt to draw conclusions from their study results.

SUMMARY

A good journal abstract is an immensely valuable tool for the physical therapist. It can enable a reader to quickly grasp the essence of a published article and help the reader decide whether to pursue the article for detailed reading. An inexperienced writer can "practice" valuable skills and writing style by attempting to write an abstract. The selective reading process begun by reading abstracts helps many therapists keep up with the growing body of medical knowledge.

The Journal publishes most abstracts if the form, organization, and style are relatively clear, and as long as the abstractor does not inject opinions into the text. It is up to abstractors to make the material meaningful for the readers!

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