



Publishing Your Research Findings: Strategies for Success

Mark P. Jensen, Ph.D.

University of Washington, Seattle, WA USA

Goal

Review common errors made by authors
(articles submitted to *The Journal of
Pain*), and

Strategies to avoid these errors, and

Present a model outcome for a paper, to

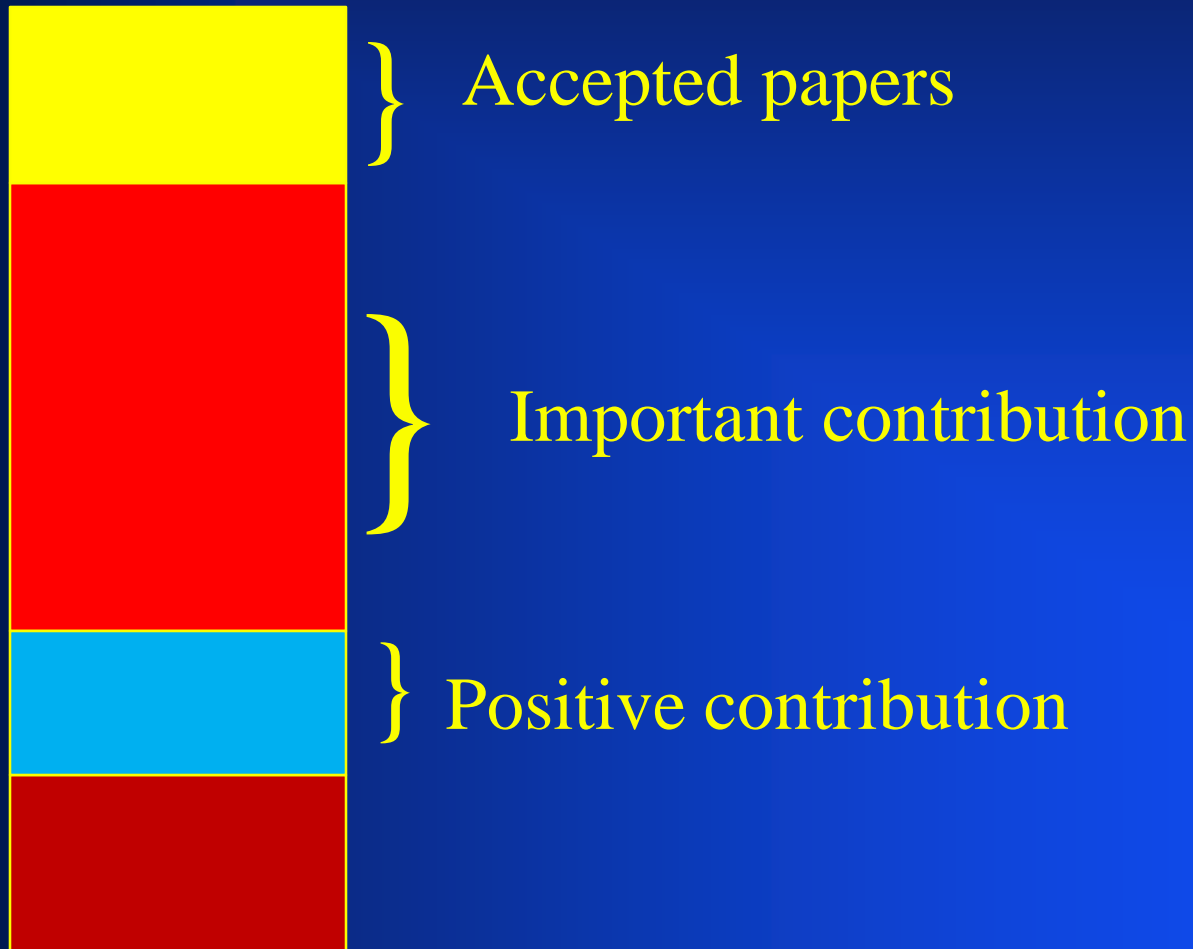
→ *Increase your chances of
article acceptance*

Journal of Pain

Over 1200 submissions
per year

~18% acceptance rate

Journal of Pain



Common problems

Asked reviewers: Which of several possible reasons was a paper not acceptable?

10 most common

Number 10

A tie:

Inappropriate statistical
procedures

Background

inadequately thorough

Number 10: 11% each

A tie:

Inappropriate statistical
procedures

Background

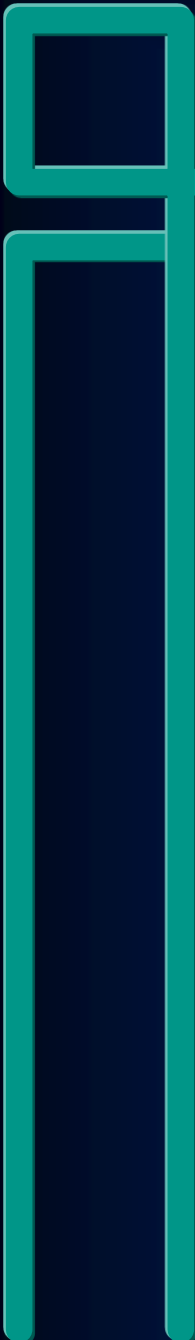
inadequately thorough

Number 9

Lack of specific
hypotheses or study
questions listed

Number 9: 14%

Lack of specific
hypotheses or study
questions listed



Examples of text from rejected articles

Hypotheses

... Different instruments are used for evaluating quality of life and health status, and produce data for strategies for facing health problems. Therefore, the aim of this study was to *evaluate the impact of* neuropathic pain on the quality of life in a community.

Hypotheses

...Thus far, no studies have explored patients' self-reported and health care providers' observed OA pain among older people. Therefore, this study had two purposes: to explore knee OA pain among non-cognitively impaired older people by subjective and observed pain-assessment tools and to compare their outcomes.

Hypotheses

We addressed this subject by *examining* the profiles indicative of depressive-like behaviors in mice... Moreover, we *investigated* the mechanisms underlying the antidepressant-like action... Our results showed ...



Examples of text
from accepted
articles

Hypotheses

The purpose ... was to compare the responsiveness of NRS and VRS measures of current pain intensity in patients with chronic nonmalignant pain and ... We hypothesized that the NRS would be more responsive than the VRS

Hypotheses

...we hypothesized that TRPV1 receptor activity modulates musculoskeletal nociception in mice... Based on ...we also examined their possible role in the transmission of nociception from muscles by assessing the effect of intrathecally (i.t.) injected RTX on musculoskeletal nociception.

Hypothesis paragraph

- Almost always the last paragraph in the Introduction
- The more specific (& less exploratory), the better
- Descriptive studies triaged

Number 8

Inappropriate for the
Journal of Pain

Number 8: 18%

Inappropriate for the
Journal of Pain

Number 8: 18%

Inappropriate for the journal:

Focus on a specific procedure of interest to only a small subset of readers

For JoP, pain must be central

→ *The study should advance our scientific understanding of pain*

Number 7

Inadequate rationale for
the study



Number 7: 18%

Inadequate rationale for
the study

Number 7: 18%

Inadequate rationale for the study:

→ *Build an argument in the Introduction for why this particular study is needed*

Number 6

Inadequate sample size

Number 6: 25%

Inadequate sample size

Number 6: 25%

Inadequate sample size

Statistics do not usually begin to adequately represent a population until the sample reaches about 50

For regression analyses, one rule of thumb is $50 + (8 \times \text{\# predictors})$. Six predictors, $N = 98$ subjects

Number 5

Inadequate theoretical
development

Number 5: 36%

Inadequate theoretical
development

Number 5: 36%

Inadequate theoretical development

What pain theory or model is this study testing?

→ The model could be physiological, psychological, or social, but reviewers rate studies that test and develop theory higher than those that do not

Number 4

Inadequate Discussion

Number 4: 39%

Inadequate Discussion

Number 4: 39%

Inadequate Discussion

- Don't restate Results

- Discuss theoretical implications

- Discuss clinical implications if warranted
(why do the findings matter?)

- Discuss future steps

- Discuss limitations

Number 3

Inadequate study design

Number 3: 39%

Inadequate study design

Number 3: 39%

Inadequate study design

- Procedural problems
- Measures inadequate or not appropriate
- Sample not appropriate
- Inadequate (or no) control condition

Number 2

A purely or mostly
descriptive study

Number 2: 43%

A purely or mostly
descriptive study

Number 2

Descriptive study:

Describes how many people with
X report pain

Reports the association between X
and Y in persons with pain

Number 2

A purely or mostly descriptive study:

Is there a theory that would predict a specific outcome?

Are there competing theories that would predict different outcomes?

A descriptive study should have compelling theoretical or clinical implications



Number 1



Number 1

Study inadequately
innovative

Number 1: 64%

Study inadequately
innovative

Number 1: 64%

Study inadequately innovative

Findings should move our scientific understanding forward in some clear way

How is the field of pain because of this study? Answer should be compelling and exciting

In order to get published ...

Submit an article that:

Provides answers to a compelling question that moves our understanding of pain forward.

Is more than merely descriptive

Has a design that can provide definitive answers

Discusses the theoretical, clinical, and research implications of the findings

In order to get published...

- Is based on a theory or model
- Includes an adequate sample size
- Provides a clear reason/rationale for the study
- Focuses on topic of the journal (is appropriate for the journal)
- Lists specific hypotheses or study questions
- Provides a thorough and scholarly background
- Uses appropriate statistical procedures

Key, central, critical...

Provides answers to a
compelling question
Is more than merely
descriptive

Special requests

Read and follow instructions
to authors, including word
limits

Write clearly

Maintain appropriate brevity

Model for writing a paper



Model for writing a paper

1. Write last paragraph of the Intro.

Model for writing a paper

1. Write last paragraph of the Intro.
2. Complete analyses, make tables, write and finalize Results section.

Model for writing a paper

1. Write last paragraph of the Intro.
2. Complete analyses, make tables, write and finalize Results section.
3. Write rest of Intro.

Model for writing a paper

1. Write last paragraph of the Intro.
2. Complete analyses, make tables, write and finalize Results section.
3. Write rest of Intro.
4. Write Discussion.

Model for writing a paper

1. Write last paragraph of the Intro.
2. Complete analyses, make tables, write and finalize Results section.
3. Write rest of Intro.
4. Write Discussion.
5. Edit for clarity of writing and consistency with author instructions.

Last paragraph of Intro

State study hypothesis or list primary study hypotheses and exploratory hypotheses (or list study questions).

Last paragraph of Intro

State study hypothesis or list primary study hypotheses and exploratory hypotheses (or list study questions).

Hypotheses or study questions need to *matter*.

Last paragraph of Intro

State study hypothesis or list primary study hypotheses and exploratory hypotheses (or list study questions).

Hypotheses or study questions need to *matter*.

“Based on these considerations, the current study sought to... We hypothesized that *X*... In addition, we examined the extent to which *Y* and *Z*...

Last paragraph of Intro

Provides the outline for each section of the rest of the paper:

- Measures (after demographics)
- Data analysis paragraph
- Results
- Discussion

Methods

Subjects

Methods

Subjects

Measures (only those related to study hypotheses and questions)

Methods

Subjects

Measures (only those related to study hypotheses and questions)

Procedures

Methods

Subjects

Measures (only those related to study hypotheses and questions)

Procedures

Data Analysis

Methods

Subjects

Measures (only those related to study hypotheses and questions)

Procedures

Data Analysis

- We first computed... for descriptive purposes

Methods

Subjects

Measures (only those related to study hypotheses and questions)

Procedures

Data Analysis

- We first computed... for descriptive purposes
- In order to test the primary study hypothesis that X...we[explain statistical tests]

Methods

Subjects

Measures (only those related to study hypotheses and questions)

Procedures

Data Analysis

- We first computed... for descriptive purposes
- In order to test the primary study hypothesis that X ...we[explain statistical tests]
- Next, in order to examine Y , we...

Methods

Subjects

Measures (only those related to study hypotheses and questions)

Procedures

Data Analysis

- We first computed... for descriptive purposes
- In order to test the primary study hypothesis that X ...we[explain statistical tests]
- Next, in order to examine Y , we...
- Finally, to examine Z , we...

Results

Description of subjects

Results

Description of subjects

Test of Hypothesis X

Results

Description of subjects

Test of Hypothesis X

Examination of Y

Results

Description of subjects

Test of Hypothesis X

Examination of Y

Examination of Z

Results

Description of subjects

Test of Hypothesis X

Examination of Y

Examination of Z

Nothing else

Introduction

Paragraph 1: The problem

Paragraphs 2-5: What we
know

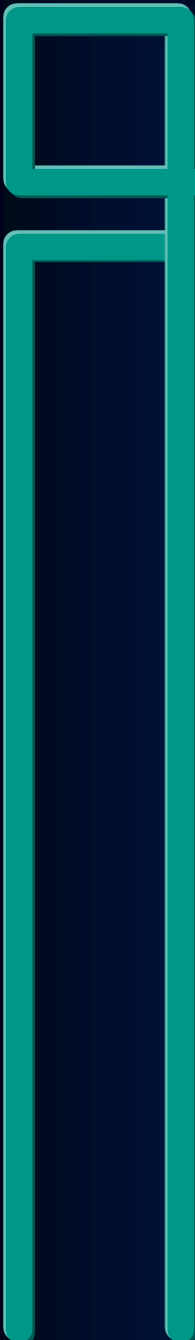
Last paragraph: Hypotheses

Intro: Para 1

What is the problem that this study will address?

Best if described in human terms.

Should “hook” the reader



Examples of text
from first paragraph
of rejected articles

Intro: Para 1

Pain affects different aspects of human beings ... It is a multifactorial phenomenon that involves tissue lesions, emotional, sociocultural and environmental aspects. According to IASP, pain is translated by unpleasant sensory and emotional associated with or related to real or potential lesions of tissues, or described in these terms.

When the pain lasts for longer than six months, it is classified as chronic, and determines high costs to the health system.

Intro: Para 1

Pain is a disagreeable sensorial and emotional experience that is generally associated with real or potential tissue damage. Chronic pain, which is commonly joined with a psychological component, is a sensorial experience that is prolonged to the point of being seemingly unlimited. The constant bombardment can have detrimental effects on one's physical, emotional, mental, and spiritual health, making every day more challenging.

Intro: Para 1

Previous studies demonstrated that *Withania somnifera* Dunal (WS), a safe medicinal plant, prevents the development of tolerance to the analgesic effect of morphine.



Examples of text
from first paragraph
of accepted articles

Intro: Para 1

Complex regional pain syndrome (CRPS) is a distressing complication of some minor injuries... characterised by disproportionate pain and disability... Total annual lost income due to CRPS exceeds USD \$1 billion. Despite many treatments for CRPS... over half of all CRPS patients report continuing or worsening symptoms five years after diagnosis.

Intro: Para 1

Back pain is the most prevalent chronic pain problem, Although most patients presenting with back pain ...improve significantly over the next few months, a substantial minority have persistent, high-intensity pain ... If persons at high risk for chronic back pain could be identified during their initial primary care visits, treatment could be tailored to the level of individual risk...

Intro: Para 1

The transient receptor potential vanilloid-1 receptor (TRPV1) ...expressed all over the body ... is crucial to the development of many human conditions and animal models of hyperalgesia...TRPV1 receptor expression is increased in painful diseases like fibromyalgia, irritable bowel syndrome, vulvodynia, mastalgia, and fibrosarcoma.

□ Paras 2-5: What we don't know

Must cite key findings, while

Paras 2-5: What we don't know

Must cite key findings, while
Leading the reader to understand a
critical knowledge gap, that

Paras 2-5: What we don't know

Must cite key findings, while
Leading the reader to understand a
critical knowledge gap, that
Addresses the problem raised, and

Paras 2-5: What we don't know

Must cite key findings, while
Leading the reader to understand a
critical knowledge gap, that
Addresses the problem raised, and
Will be addressed when the study
hypothesis is tested.

Paras 2-5: What we don't know

Must cite key findings, while
Leading the reader to understand a
critical knowledge gap, that
Addresses the problem raised, and
Will be addressed when the study
hypothesis is tested.

*Key: Must lead naturally to the last
paragraph of the Introduction*

Discussion: Paragraph 1

Summary of key findings, and mention if hypotheses were supported or not

“The current findings indicate....

Consistent/inconsistent with the study hypothesis... in addition....

These findings have important theoretical and clinical implications.”

Discussion: Implications paragraphs

1-2 paragraphs describing the implications of the findings with respect to *primary* hypothesis.

Mention next steps in research.

Include text regarding the *importance* of the findings.

Discussion: Implications paragraphs

2-4 paragraphs describing the implications of the findings with respect to study questions Y and Z.

Mention next steps in research.

Include text regarding the *importance* of the findings.

Discussion: Limitations section

Problems with study
procedures

Problems with sample

Fixes to include in future
research

Discussion: Summary paragraph

“Despite the study
limitations...the
*findings...state key take home
message(s)*”

Be inspiring

Prior to submission

Edit for clarity, typographical errors, and grammar.

Double and triple check that you have followed the author instructions to the letter.

Summary

The chances of article acceptance are increased if you follow a number of steps...

Summary

Ensure the topic of the study *matters* (and make it clear why it matters in the Introduction)

Summary

Write (and submit)
theory-based papers
that are hypothesis-
driven.

Summary

Use the last paragraph of the Introduction to guide the entire paper.

Summary

Ensure that the submitted paper is clearly written, has correct grammar, has no typographical errors, and has the correct format.

Summary

And then enjoy
your publishing
success!

Thank You!



Images courtesy of stockimages at FreeDigitalPhotos.net