COMPONENTS OF AN ORIGINAL RESEARCH ARTICLE
How to write?

- People read the sections of scientific papers in various orders.
- You can write the sections of a scientific paper in any order.
- A convenient order in which to write the sections: Methods, Results, Discussion, Introduction, abstract, title.
The IMRAD Format for Scientific Papers

• Introduction: What was the question?
• Methods: How did you try to answer it?
• Results: What did you find?
• And
• Discussion: What does it mean?
A report on Disability and Rehabilitation Medicine in Pakistan: Past, present and Future Directions

Faroq A Rathore MBBS, FCPS*, Peter W New M Clin Epi., Amal Iftikhar MBBS

Authors' Affiliations

From the Dept. of Rehabilitation Medicine, Combined Military Hospital, Panoaqil Cantt, 65130 Pakistan (Rathore); Acute Rehabilitation, Subacute services, Medical Program, Southern Health, Victoria, Australia, Spinal Rehabilitation Unit, Caulfield Hospital, Alfred Health, Melbourne, Australia and Departments of Medicine and Epidemiology & Preventive Medicine, Monash University, Monash University, Victoria, Australia (New); Louisiana State University, 1501 Kings Hwy, Shreveport, LA 71103, USA (Iftikhar)

*Corresponding Author: Dr Farooq Azam Rathore. Consultant, Department of Rehabilitation Medicine, Combined Military Hospital, Panoaqil Cantt 65130, Sindh, Pakistan farooqrathore@gmail.com

Office: +92-71-291-3645

Cell: +92-300-5047904

Word Count: 3890

Financial Disclosure: We certify that no party having a direct interest in the results of the research supporting this article has or will confer a benefit on us or on any organization with which we are associated AND, if applicable, we certify that all financial and material support for this research (eg, NIH or NHS grants) and work are clearly identified in the title page of the manuscript.
How do patients with chronic spinal injury in Pakistan manage their bowels? A cross sectional survey of 50 patients.

Rehana Yaseen MBBS, FCPS (PM&R) 1, Farooq Azam Rathore MBBS, FCPS (PM&R) 1, Khalid Ashraf MBBS, FCPS (PM&R) 1, Aamir W Butt MBBS, FCPS (PM&R) 3

Authors' Affiliations

1Department of Rehabilitation Medicine, Combined Military Hospital, Panno Aqil Cantt, Sindh, Pakistan

2Spinal Rehabilitation Unit, Armed Forces Institute of Rehabilitation Medicine, Rawalpindi 46000, Pakistan

*Corresponding Author: Dr. Farooq A Rathore

Spinal Rehabilitation Unit, Armed Forces Institute of Rehabilitation medicine, Abid Majeed Rd, Rawalpindi, 46000, Pakistan faroograthore@gmail.com

Cell No: +92-300-5047903

Office: +92-51-561-31721

Conflict of Interests: None

Disclaimer: none

Acknowledgments: None

Running head: Bowel care Practices in SCI in Pakistan
The many faces of traditional pain management in developing countries: A case series from Pakistan

Farooq A Rathore FCPS *(Corresponding author)*
Department of Rehabilitation Medicine, Combined Military Hospital, Lahore Cantt, Punjab, Pakistan, University of Health Sciences, Lahore, Pakistan
farooqrathore@gmail.com  +92-300-5047903

Sahibzada Nasir Mansoor FCPS
Department of Rehabilitation Medicine, Combined Military Hospital, Kohat, KPK, Pakistan
drnasirmansoor@gmail.com

Ahmad Zaheer Qureshi MBBS
Department of Physical Medicine and Rehabilitation, King Fahad Medical City, Riyadh, Saudi Arabia.
qureshipmr@gmail.com

Type of article: Research Article
Short Title: Traditional Pain management
Conflict of interest: None declared
Sponsorship: Nil
Disclosure: Nil
Word count: 2549
Title

- First thing which everybody reads!!!
- Important in literature searching
- Should not include extra words, such as “A Study of” or “Observations on”
- Should be specific enough
- Generally should not include abbreviations
- Running title: short version of title—appears at tops of pages
ICMJE authorship criteria

- **Substantial contributions** to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; **AND**
- **Drafting the work** or **revising it critically** for important intellectual content; **AND**
- **Final approval** of the version to be published; **AND**
- Agreement to be **accountable for all aspects of the work** in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.
Authors

- Often listed largely from greatest contributions to least
- Head of research group often is listed last
- Important to list one’s name the same way on every paper
- General supervision of research group, participating solely in acquisition of funding, collection of data does not justify authorship
- Order of the author should be a joint decision of the authors
Introduction
Introduction

1. Background information
   - What have others done?
   - Provide evidence: supported by limited number of relevant references.

2. Purpose of study
   - Why undertake this research?
   - How does it relate to what has already been written?
   - What is so different or special about your research?

- Should stimulate the readers interest
Common Mistakes*

- Overlong and rambling introduction section
- Extensive listing of references
- Extensive critique of others’ work
- Important previous work missing
- Objectives not clearly stated
- Inclusion of data or conclusions from the work being reported

*Peh WC, Ng KH. Writing the introduction. Singapore Med J. 2008;49:756-7
Methods
Purposes of the Methods Section

- To allow others to replicate what you did

- To allow others to evaluate what you did
Reviewers have asked Newton to reproduce the apple gravity experiment
Purposes of the Methods Section

- To allow others to replicate what you did
  - In order to test it
  - In order to do further research
- To allow others to evaluate what you did
  - To determine whether the conclusions seem valid
  - To determine whether the findings seem applicable to other situations
Methods: Basic Information to Include

- Overview of study design

- Identification of (if applicable)
  - Equipment, organisms, reagents, etc used (and sources thereof)
  - Populations
  - Approval of human or animal research by an appropriate committee
  - Statistical methods
Methods: Amount of Detail to Use

- For well-known methods: name of method, citation of reference
- For methods previously described but not well known: brief description of method, citation of reference
- For methods that you yourself devise: relatively detailed description
Methods: The Words and More

- Should be written in past tense
- In some journals, may include subheads (which can help readers)
- May include tables and figures—for example:
  - Flowcharts
  - Diagrams of apparatus
  - Tables of experimental conditions
Results
The Results Section

- The core of the paper
- Often includes tables, figures, or both
- Should summarize findings rather than providing data in great detail
- Should present results but not comment on them
Verb Tense for the Results Section

Use Past Tense

Examples:

- A total of 417 patients showed ______.
- ______ increased, but ______ decreased.
- The average depth was ______.
- In all, 93% of the dental students and 77% of the medical students indicated that ______.
- The difference in ______ was not statistically significant.
Common Mistakes *

- Illogical sequence of data presentation
- Inaccurate data
- Repetition of data
- Misplaced information between the materials and methods and results sections
- Inappropriate presentation of data – overuse and abuse of tables and figures
- Attempts to draw conclusions – this should be covered in the discussion section

*Peh WC, Ng KH. Writing the results. Singapore Med J. 2008;49:067-9
Using Tables or Figures

- How much should the information in the text overlap that in the tables and figures?
  - Not extensive overlap
  - In general, text should present only the main points from the tables and figures
  - Perhaps also include a few of the most important data
- Remember to label and describe each table or figure
Tables and Figures

- In citing tables and figures, emphasize the finding, not the table or figure.
  - *Not so good:* Table 3 shows that researchers who attended the workshop published twice as many papers per year.
  - *Better:* Researchers who attended the workshop published twice as many papers per year (Table 3).
Tables: A Few Suggestions

- Use tables only if text will not suffice.
- Design tables to be understandable without the text.
- If a paper includes a series of tables, use the same format for each.
- Be sure to follow the instructions to authors.
Figures: A Few Suggestions

- Use figures (graphs, diagrams, maps, photographs, etc) only if they will help convey your information.
- Avoid including too much information in one figure.
- Make sure that any lettering will be large enough once published.
- Follow the journal’s instructions.
Discussion
Discussion

- Most difficult part of a paper to write
- Do not repeat all data of the study
- Write in short paragraphs
- Do not let discussion get too long
- Should not exceed half the length of the whole article
Discussion

- Often should begin with a brief summary of the main findings
- Typically should move from specific to general, rather like an inverted funnel (opposite of introduction)
- Should answer the question(s) stated in the introduction (or address the hypothesis /hypotheses stated in the introduction)
Discussion

- Relationship to findings of other research—for example:
  - Similarities to previous findings (your own, others’, or both)
  - Differences from previous findings
  - Possible reasons for similarities and differences
- Applications and implications—for example:
  - Possible uses of the findings (in health care, public policy, industry etc)
Strengths and limitations

- **Strengths of the study**
  - For example, superior methods, extensive data

- **Limitations of the study**
  - For example: small sample size, short follow-up, incomplete data, possible sources of bias, problems with experimental procedures
  - Better to mention limitations than for peer reviewers and readers to think that you’re unaware of them
Common Mistakes!

- Repetition of data presented in the results section.
- Incorrect interpretation of the findings.
- Importance of results inadequately discussed or omitted.
- Conclusions not supported by findings.
- Irrelevant and faulty discussion points.
- Failure to identify any weakness.
- Omission of key and relevant references.
- Preferential quoting of references.
- Explanations are too long or verbose.
Acknowledgments

- Often optional
- A place to thank people who helped with the work but did not make contributions deserving authorship
- Permission should be obtained from people you wish to list
- Sometimes the place where sources of financial support are stated
WHY ABSTRACT WRITING IS A SERIOUS BUSINESS?

Maj. Farooq Rathore
The Abstract

- The abstract should be the best part of the paper!

- It is the most frequently read part of an article after the title.
Purposes of the Abstract

- Provides an overview of the article (readers may read nothing else)
- Provides context for those who do read the article
- Used by journals to assign reviewers
- Helps reader decide whether to read the article (ie, is this important to me?)
- Used by translation services for foreign readers
Characteristics of the Abstract

- Accurate, coherent, and readable
- Concise, specific, and selective
- Self-contained, i.e. stand alone
Self-contained, ie, stand alone

- Complete and internally consistent
- No references
- No tables or figures
- No or few abbreviations (must be defined)
- Conclusions should be based on data/info presented within the abstract
What Abstracts Are NOT

- Not substitutes for the article and should not be cited as references
- Not a summary of the entire article; should present main finding
- Do not contain enough information for a critical evaluation of the research
Content of an Abstract

- Define purpose and scope of study, i.e., the question
- Describe materials and methods used
- Summarize the results
- State the conclusions and their implications
Types of abstracts

- Unstructured
- Structured
Unstructured abstract

- The abstract should contain the essence of whole paper and should stand alone
- It should have 4 basic parts:
  - Why the study was done? (Purpose of study/objective)
  - What was done? (Materials & Methods)
  - What was found? (Main findings/results)
  - What was concluded (Principal conclusions)
- Be concise, avoiding unnecessary details, no paragraphing
- Word count: 150 - 200
- Key words: 3 – 10 (Mesh)
A Report on Disability and Rehabilitation Medicine in Pakistan: Past, Present, and Future Directions

Farooq A. Rathore, MBBS, FCPS, Peter W. New, M ClinEpi, Amal Iftikhar, MBBS


Disability is a stigma in Pakistan, and cultural norms are a hindrance to the integration of the disabled into the community. Additional barriers to addressing the needs of the disabled include the lack of reliable disability epidemiologic data, inadequate funding and poor health care infrastructure, and workforce shortages. The aim of this report is to present an overview of Physical Medicine and Rehabilitation (PM&R) in Pakistan, covering its origins, current status, and future directions. An electronic literature search (1950–2009) was conducted using the Medline, ScienceDirect, Springer Link, CINAHL, and Google Scholar databases. The key words used were “disability,” “persons with disability” (PWDs), “rehabilitation,” “Pakistan,” “developing countries,” “stroke,” “spinal cord injury,” “causes,” “attitudes,” “physiotherapy,” “occupational therapy,” and “speech therapy.” Only publications in English involving physical disability were selected. Statistical data were obtained from the Federal Bureau of Statistics. Interviews with pioneers of rehabilitation medicine in Pakistan, PWDs, and their families were conducted. The origins of PM&R in Pakistan date back to the 1960s, but the formal training program began only in 1997. There are only a few rehabilitation departments and none have all the standard components of a rehabilitation team. The number of practicing rehabilitation consultants is 38. There are an estimated 1000 physical therapists and 150 occupational therapists. There is a need to increase the number of rehabilitation facilities significantly, staff them appropriately, and make them accessible to all who need them, including rural and remote regions. Discrimination should be addressed by education and legislation.

Key Words: Developing countries; Disabled persons; Occupational therapy; Pakistan; Rehabilitation.
© 2011 by the American Congress of Rehabilitation Medicine

IN DEVELOPING COUNTRIES like Pakistan, where even basic health care facilities are not available to most of the population, disability management and rehabilitation are not considerations of most health care providers. Generally, PM&R is not well understood or organized in developing countries. Despite the challenges, addressing the needs of the disabled in developing countries is important from the perspective of human rights, and it is also quite likely to be cost-effective. This report initially provides general background information about Pakistan and a brief overview of health care and disability in order to provide context for the remainder of this report. It then focuses on the origins of PM&R in Pakistan and its current status, and highlights possible future directions.

METHODS

Data Sources

Information for this report was obtained from numerous sources. An electronic literature search (1950–2009) was performed to identify relevant articles about rehabilitation medicine in Pakistan and other developing countries using the Medline, ScienceDirect, Springer Link, CINAHL, and Google Scholar databases. The key words used were “disability,” “persons with disability” (PWDs), “rehabilitation,” “Pakistan,” “developing countries,” “stroke,” “spinal cord injury,” “causes,” “attitudes,” “physiotherapy,” “occupational therapy,” and “speech therapy.” The online database of dissertations and theses of the CPSP and the Higher Education Commission of Pakistan were also searched for potentially useful publications. All biomedical journals published in Pakistan and official government correspondence and reports are published in English. Statistical data were obtained from the web site of the Federal Bureau of Statistics.

We identified all relevant articles of any publication type published in English. Only publications related to physical disability were included because other disabilities are not managed by rehabilitation physicians in Pakistan.

One of the authors (F.A.R.) interviewed the pioneers of PM&R in Pakistan and senior specialists for additional insights. Allied health professionals and organizations were approached and asked to provide the data regarding physiotherapy, occupational therapy, speech therapy, and prosthetists and orthotists in Pakistan. One of the authors (F.A.R.) also conducted interviews of PWDs and their families presenting to the AFIRM. The purpose of these interviews was to record atti-
SPECIAL REPORT

MEETING THE CHALLENGES OF SPINAL CORD INJURY CARE FOLLOWING SUDDEN ONSET DISASTER – LESSONS LEARNED

Anthony S. Burns MD, MSc¹, Colleen O’Connell MD FRCPC² and Farooq A. Rathore MBBS, FCPS³

From the ¹Toronto Rehabilitation Institute, University of Toronto, Lyndhurst Centre, Toronto, Ontario, ²Stan Cassidy Centre for Rehabilitation, Physical Medicine & Rehabilitation, Healing Hands for Haiti/Team Canada Healing Hands, Fredericton, New Brunswick, Canada and ³Spinal Rehabilitation Unit, Armed Forces Institute of Rehabilitation Medicine, Michael Moles Fellowship, World Association for Disaster and Emergency Medicine, Rawalpindi, Pakistan

Improved disaster response has led to higher survival rates and an increasing number of injuries in relation to deaths (injury to death ratio). Recent earthquakes, in particular, have led to unprecedented numbers of spinal cord injuries. Meeting the needs of individuals with spinal cord injuries is particularly challenging when disaster strikes a low resource environment. Clinicians who care for spinal cord injuries can learn from prior experiences and proactively address how to best meet needs in future disasters. Here we review and propose measures targeted to specific challenges including: coordination and mobilization; identification and procurement of required expertise; initial survey and assessment; health care delivery; community reintegration and health maintenance; and sustainability and capacity building.

Key words: spinal cord injuries; quadriplegia; paraplegia; rehabilitation; disasters; disaster planning; earthquakes.


Correspondence address: Anthony S. Burns MD, MSc, Toronto, Canada
Biological markers in osteoarthritis

Jean-Charles Rousseau* and Pierre D Delmas

SUMMARY
Osteoarthritis (OA) is a progressive disorder characterized by destruction of articular cartilage and subchondral bone, and by synovial changes. The diagnosis of OA is generally based on clinical and radiographic changes, which occur fairly late during disease progression and have poor sensitivity for monitoring disease progression. Progression of joint damage is likely to result primarily from an imbalance between cartilage degradation and repair, so measuring markers of these processes would seem a promising approach to improve the prediction of disease progression at the individual level. Moreover, genetic markers might be useful predictors of prognosis. The lack of fully effective, chondroprotective medications has limited the use of such potential markers to monitor the effect of treatment for OA. Nevertheless, owing to their dynamic changes in response to treatment, biological markers might provide relevant information more rapidly than imaging techniques (such as radiography and MRI) can, and should contribute to our understanding of mechanisms that underlie the clinical efficacy of OA treatments. Most of the identified genes involved in OA encode signal-transduction proteins, which provide the potential for novel therapeutic approaches. In this Review, we will use the recently proposed BIPED (i.e. burden of disease, investigative, prognostic, efficacy of intervention and diagnostic) classification of OA markers to describe the potential usage of a given marker.

KEYWORDS biological markers, cartilage, collagen, osteoarthritis, proteoglycan

INTRODUCTION
The hallmark of osteoarthritis (OA), the most common joint disease, is cartilage loss that leads to joint destruction and severe impairment of mobility. OA is one of the most prevalent causes of disability in the aging population of developing countries. The best-established methods of assessing the progression of cartilage loss are measurement of the joint-space width on plain radiography, and arthroscopic evalu-
Structured abstract

- Labelled headings
  - Background
  - Objective
  - Setting
  - Study design
  - Subjects & methods
  - Results
  - Conclusions
- Key words; 3 – 10 (Mesh)
- Word count 250 -300
Original Article

Epidemiology of spinal cord injuries in the 2005 Pakistan earthquake

MFA Rathore*, 1, P Rashid1, AW Butt1, AA Malik1, ZA Gill1 and AJ Haig2

1Spinal Rehabilitation Unit, Armed Forces Institute of Rehabilitation Medicine, Rawalpindi, Pakistan; 2Department of Physical Medicine and Rehabilitation, The University of Michigan, Ann Arbor, M1, USA

Study design: Prospective observational study.
Objectives: To identify the epidemiological features specific to spinal injuries as a result of an earthquake.
Settings: Rawalpindi, Pakistan in the months after the 8 October 2005 earthquake.
Methods: In the month after the earthquake, the one established rehabilitation center was augmented with two makeshift spinal cord centers. Information on mechanism of injury, mode of evacuation, associated injuries was gathered, and a detailed clinical and radiological assessment was performed. Neurological status and functional outcome was determined after 10 weeks.
Results: Of an estimated 650–750 spinal cord injuries, 187 were admitted to these centers, including 80 men and 107 women with a mean age of 28.3 ± 12.4 years. Injuries occurred while standing in 57.8% of patients. Most (83.4%) who reached the spinal cord center were airlifted. A urinary catheter had been placed before admission in 91.5%. Most of the patients were paraplegic 89.3%, with 50.8% incomplete injuries. Fracture or fracture dislocation was present in 70, and 75% underwent spinal fixation. Although pressure ulcers (28.9%) and urinary tract infections (39%) were common, deep venous thromboses (4.8%) and depression (5.8%) were seldom detected. At 10 weeks, 75% were continent or performing intermittent catheterization. There were no deaths and two births.
Conclusion: After a disaster, evacuation of persons with a spinal cord injury to a specialized center results in low mortality. Response planning for disasters should include early aggressive medical rehabilitation.
Sponsorship: None.

Keywords: spinal cord injury; earthquake; natural disasters; Pakistan; trauma
A prospective study of the long-term efficacy of local methyl prednisolone acetate injection in the management of mild carpal tunnel syndrome

V. Agarwal, R. Singh, A. Sachdev, Wiclag, S. Shekhar and D. Goel

Objective. Local glucocorticoid injections are used to treat carpal tunnel syndrome (CTS). However, this treatment is associated with frequent relapses. An important limitation of studies with higher relapse rates is that no attempt has been made to identify patients with mild or severe disease. We evaluated the efficacy of local glucocorticoid injection in patients with mild CTS.

Method. Mild CTS was defined as intermittent symptoms without absence of sensations, muscle atrophy or weakness of the thenar muscles. Forty-eight patients with idiopathic mild CTS were evaluated before and 3 and 12 months after a single local injection of 40 mg methyl prednisolone acetate. Outcome was assessed by overall satisfaction on a 100 mm visual analogue scale, the Boston self-administered questionnaire for symptom severity and functional scores and improvement in the electrophysiological parameters.

Results. At 3 months, 93.7% of the patients reported marked improvement in their symptoms, with significant improvement in the mean values of the nerve conduction parameters distal motor latency at the wrist (DML) \( P = 0.00001 \), distal sensory latency at mid-palm (DSL MP) \( P = 0.014 \) and distal sensory latency at the wrist (DSL W) \( P = 0.0003 \), and symptom severity \( P = 4.96 \times 10^{-8} \) and the functional scores \( P = 3.56 \times 10^{-5} \). Significant improvement was still present for DML \( P = 1.39 \times 10^{-5} \) at 12 months. Almost 50% of the patients achieved normalization in the electrophysiological study. At a median follow-up of 16 months, 79% patients continued to have improvement in their symptoms. Eight patients (16.6%) relapsed following the initial response.

Conclusions. Local glucocorticoid injection results in long-term improvement in nerve conduction parameters, symptom severity and functional scores in patients with mild CTS.

Keywords: Local glucocorticoid, Electrophysiology, Outcome assessment.
Remember !!!!

• Make the abstract the best part of the article

• Make sure it is concise, factual and stand-alone.

• Double check every piece of data

• Select the keywords carefully
Medical Writing – A suggestion

- Read some papers in your target journal.
- Notice items such as the following:
  - Length
  - Types of content
  - Organization
  - Phrases commonly used
  - Citation of references
- Use these papers as models.
Questions? Comments? Additions?

YOU FAIL ONLY IF YOU STOP WRITING