# Read, Write, Publish, & Review Scientific Literature

Elizabeth S. Rose, EdD MPH May 8, 2025

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### Outline

- 1. Reading the literature
  - Types of articles
  - Understanding paper sections
  - Literature reviews
- 2. Writing and publishing your work
- 3. Reviewing manuscripts for publication

# Reading the Literature

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### Why review the literature?

- <u>Critically</u> summarize the research literature
- Contextualize the research problem
- Identify gaps in previous studies
- Justify a new investigation
- Avoid duplication
- Provide a conceptual framework
- Assess feasibility
- Find methodological suggestions
- Show that you know the literature in the field

### Conducting a literature review

- 1. Start by stating your research question as clearly as possible
  - PICO format:
    - **People/population/problem:** What are the population characteristics? What is the condition or disease?
    - Intervention: What do you want to do with this patient/community? i.e., treat, diagnose, quality improvement
    - **Comparisons:** [not always included] What is the alternative to this intervention? i.e., placebo, different drug, surgery
    - **Outcomes:** What are the potential outcomes? i.e., morbidity, death, complications, improvements
  - Iterative process mentors, peers, librarians can be useful resources
- 2. Find and read articles related to your topic
- 3. Organize your literature review

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### Organizing your literature review

Author/	Study Objectives	Level/Design/Subjects	Intervention and	Results	Study Limitations
Year			Outcome Measures		

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## Example #1

#### TABLE 1 Findings of the reviewed sources

Authors	Origin	Purpose	Type of source	Research design	Target population	Conceptual/theoretical framework	Framework proposed	Major themes
Campbell (1980)	USA	To describe the relationship of self-awareness in nursing	Discussion	NA	Nurses	No	The self-model	Conceptualisation, antecedents, value and strategies for enhancing self-awareness
Krikorian and Paulanka (1982)	USA	To evaluate a personal behaviour analysis tool to enhance self- awareness of nursing students	Research	Pre-post experimental action research	Nursing students	No	No	Educational strategy for enhancing self-awareness
Burnard (1986)	UK	To propose a model for enhancing self-awareness	Discussion	NA	Nurses	No	Integrated self-awareness model	Conceptualisation, antecedents, value and theory-based strategy for enhancing self-awareness
Burnard (1988)	UK	To define self-awareness and its benefits for intensive care nurses	Discussion	NA	Intensive care nurses	No	No	Conceptualisation of self-awareness, value of self-awareness and strategies for enhancing self-awareness
Rawlinson (1990)	UK	To describe self-awareness and its dimensions	Discussion	NA	Nurses	No	No	Conceptualisation and value of self-awareness
Drew (1997)	USA	To explore meaningful experiences of nurses with their patients	Research	Phenomenology	Nursing students	Carper's patterns of knowing	No	Conceptualisation, antecedents, value in terms of relationship with patients and strategies for enhancing self-awareness

## Example #2

Table 2	le 2 How global health has been defined by academics since 2009						
Year	Reference	Author	Definition				
2009	1	Koplan <i>et al</i>	Global health is an area of study, research and practice that places a priority on improving health and achieving equity in health for all people worldwide. Global health emphasises transnational health issues, determinants and solutions; involves many disciplines within and beyond the health sciences and promotes interdisciplinary collaboration and is a synthesis of population-based prevention with individual-level clinical care.				
2009	56	Janes and Corbett	Global health is an area of research and practice that endeavours to link health, broadly conceived as a dynamic state that is an essential resource for life and well-being, to assemblages of global processes, recognising that these assemblages are complex, diverse, temporally unstable, contingent and often contested or resisted at different social scales.				
2010	20	Beaglehole and Bonita	Our proposed definition for global health is collaborative transnational research and action for promoting health for all.				
2010	22	Bozorgmehr	The field is about building and rebuilding, researching and analysing, teaching and learning the links between social determinants of people's health anywhere in the world.				
2010	49	Crump and Sugarman	Multiple disciplines and multiple activities take place under the umbrella of global health including in the clinical, public health, research and education arenas.				
2010	50	Frenk <i>et al</i>	Global health is the goal of improving health for all people in all nations by promoting wellness and eliminating avoidable disease, disability and death. It can be attained by combining population-based health promotion and disease prevention measures with individual-level clinical care (US Institute of Medicine, 2009).				
2010	27	Fried et al	Global health and public health are indistinguishable. Both view health in terms of physical, mental and social well-being, rather than merely the absence of disease. Both emphasise population-level policies, as well as individual approaches to health promotion. And both address the root causes of ill-health through a broad array of scientific, social, cultural, and economic strategies.				
2010	51	Haffeld et al	The term 'global health' implies a globally shared responsibility to provide health as a public good through an expansive number of initiatives.				
2010	76	Lakoff	Global Health is a contested ethical, political and technical zone whose contours are still under construction.				
2011	46	Arthur <i>et al</i>	Global health issues of the modern world require coordinated multisectoral, multidisciplinary and multinational efforts to achieve effective resolutions to new multidisciplinary multinational health challenges produced by globalisation.				
2011	70	Brada	'Global health' is an argument, a position, as much as, if not more than, a thing-in-the-world. The terms of 'global health' are best understood as chronotropic, and demonstrate how actors orient themselves and others spatio-temporally, morally and professionally				
2011	89	Redwood- Campbell <i>et al</i>	The 11 defining values and principles for global health are: social justice, sustainability, reciprocity, respect, honesty and openness, humility, responsiveness and accountability, equity and solidarity.				
2012	23	Campbell <i>et al</i>	The primary characteristics of a global health definition—that it crosses borders, has a multitude of causes and involves a range of means and solutions—imply the need for multiple professionals and disciplines in addition to medical professionals but may not always be needed. A multidisciplinary approach is often, but not always, needed and beneficial and is therefore not an essential component of the field of the definition.				
2012	78	Peluso et al	The definition of global health must be rooted in health equity and focus on the collaborative and multidisciplinary nature of global health, with an emphasis on cross-cultural interactions.				

### Types of articles

- Original research
- Concise communications and short reports
- Research letters
- Case reports

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

#### Neural-Tube Defects and Antiretroviral Treatment Regimens in Botswana

Rebecca Zash, M.D., Lewis Holmes, M.D., Modiegi Diseko, B.P.H., Denise L. Jacobson, Ph.D., M.P.H., Sean Brummel, Ph.D., Gloria Mayondi, B.Sc., Arielle Isaacson, B.A., Sonya Davey, M.Phil., Judith Mabuta, Mompati Mmalane, M.D., Tendani Gaolathe, M.D., M. Essex, D.V.M., Ph.D., Shahin Lockman, M.D., Joseph Makhema, M.B., B.S., and Roger L. Shapiro, M.D., M.P.H.



Journal of Infection and Chemotherapy Volume 24, Issue 6, June 2018, Pages 476-478



Case Report

### A potential drug interaction between phenobarbital and dolutegravir: A case report

<u>Shinichi Hikasa</u><sup>a</sup> Akihiro Sawada<sup>b</sup>, <u>Hitomi Seino<sup>c</sup></u>, <u>Shota Shimabukuro<sup>a</sup></u>, <u>Kyoko Hideta<sup>a</sup></u>, <u>Noriko Uwa<sup>c</sup></u>, <u>Satoshi Higasa<sup>b</sup></u>, <u>Tazuko Tokugawa<sup>b</sup></u>, <u>Takeshi Kimura<sup>a</sup></u>

### Types of articles: Reviews

ORIGINAL RESEARCH

Journal of Virus Eradication 2018; 4: 66-71

### Safety and pharmacokinetics of dolutegravir in HIV-positive pregnant women: a systematic review

Andrew Hill<sup>1</sup>\*, Polly Clayden<sup>2</sup>, Claire Thorne<sup>3</sup>, Rachel Christie<sup>4</sup> and Rebecca Zash<sup>5</sup>

<sup>1</sup> Department of Translational Medicine, University of Liverpool, UK
<sup>2</sup> HIV i-Base, London, UK
<sup>3</sup> University College London Great Ormond Street Institute of Child Health, UK
<sup>4</sup> Faculty of Medicine, Imperial College London, UK
<sup>5</sup> Beth Israel Deaconess Medical Center, Division of Infectious Diseases, Boston, USA

Systematic reviews

- Meta-analyses and meta-syntheses
- Scientific/expert reviews

Drugs (2018) 78:1741–1750 https://doi.org/10.1007/s40265-018-1005-4

ADIS DRUG EVALUATION



Dolutegravir/Rilpivirine: A Review in HIV-1 Infection

Hannah A. Blair<sup>1</sup>

Published online: 8 November 2018 © Springer Nature Switzerland AG 2018

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### Types of articles: **Thought pieces**

- Editorials
- Commentaries
- Introductions and responses to articles

Editoria



For The Lancet Global Health's study see Articles Lancet Glob Health 2018 published online June 4. http:// dx.doi.org/10.1016/52214-

109X(18)30218-3 higher barrier to resistance than other first-line anti-For The Lancet HIV's Viewpoint see Viewpoint Lancet Infect Dis 2018; published online June 5. http://dx.doi.org/10.1016/ s2352-3018(18)30093-6 of the national health programme for all adults with HIV, and beyond.

adverse birth outcomes.

Global Health, found no significant differences between dolutegravir and efavirenz-based treatments on any

Preliminary results prompted WHO, the European including pregnant women, and in 2017, a breakthrough Medicines Agency, and the US Food and Drug Admini- pricing agreement accelerated the availability of stration to issue warnings on May 18 about the use of dolutegravir to the public sectors in low-income and dolutegravir, a first-line antiretroviral drug, by women middle income countries (LMICs). Treatment of HIV in at the time of conception. In an unplanned preliminary high-income countries presents different challenges analysis of an ongoing 4-year observational study in to those faced in LMICs, where many of the people Botswana, 0.9% (4/426) of babies whose mothers living with HIV are women. As Jienchi Dorward and became pregnant while taking dolutegravir had a neural colleagues argue in a Viewpoint published on June 5 in tube defect compared with 0.1% (14/11173) of babies The Lancet HIV, there is only limited safety data available whose mothers took other HIV medicines. An analysis to support the use of dolutegravir during pregnancy from the same study in women who started treatment and breastfeeding. This lack of data is in part because during pregnancy, published on June 4 in The Lancet pregnancy is an exclusion criteria in most clinical trials involving antiretroviral therapy.

Dolutegravir for HIV: a lesson in pregnancy safety research

The Botswana study highlights the importance of pregnancy safety research. Systematic birth surveillance-Previous studies showed that the integrase inhibitor both of livebirths and stillbirths, with sufficient power dolutegravir has superior efficacy, tolerability, and a and appropriate comparator groups—needs to be put in place before a new drug is rolled out. The global medical retrovirals. In 2016, Botswana became the first country in community also needs a better approach to test drug sub-Saharan Africa to make dolutegravir available as part safety profiles in pregnant women, for treatment of HIV

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### Types of articles: Preprints

- A recent trend in publication
- Not yet peer reviewed manuscripts are publicly shared
- Encouraged by NIH

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  - Caution: Preprints are preliminary reports of work that have not been certified by peer review. They should not be relied on to guide clinical practice or health-related behavior and should not be reported in news media as established information.

• Interpret findings with caution

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Getting started reading

- Note the...
  - Journal
  - Authors
  - Date of publication
- Scan the title and abstract to determine relevance
- Be prepared to read the article several times
  - Research articles do not read like other media
  - Very dense writing
  - Your understanding will increase with each reading

Introduction section

- Usually, the easiest part to understand
- 3 objectives:
  - Highlight why readers should care about the study
  - Demonstrate a knowledge gap in existing literature (and why this gap is important to address)
  - State the study's aim and hypothesis
- Contextualizes the research, both regionally and globally; typically, from broad to specific
- There are lots of references use this section to identify additional articles

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### Methods section

- Sample size
- Study design
- Study population
- Methods and timing of data collection
- Variables defined (outcome, exposure, covariates)
- Statistical methods
- Ethical considerations

# Be aware of bias, inappropriate methods, and other internal and external influences on study findings

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### Results section

- Do the results align with the study aims
- Results/data should be presented with little discussion/interpretation
- Check the confidence intervals
- Don't overlook tables and figures!
- Be aware of biases, inconsistencies, and confounders

# If you cite this article, you'll likely pull information from this section

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### Discussion section

- Interprets, contextualizes, and discusses impact of the results
  - How does the current study impact your research?
- Connects current findings to broader body of literature
  - Compares findings to other, previous research
  - This is another place to identify articles
- Are the authors' conclusions appropriate?
  - What is the generalizability of results?
- Strengths and limitations of the study
- Directions for future research
  - How could you improve on the study or expand upon it?

# Publishing your Research

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### Establish authorship expectations early

- Authorship criteria: International Committee of Medical Journal Editors (ICMJE)
  - 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 reviewing 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.
- Author order varies by discipline
  - Medicine: first listed = first/primary author; last listed = mentor / "senior" author

https://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html

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Know reporting expectations before you start

Randomized trial: CONSORT statement

http://www.consort-statement.org/

 Systematic review and metaanalysis: PRISMA checklist http://prisma-statement.org/

### Qualitative data: COREQ checklist

https://www.equator-network.org/reportingguidelines/coreq/

#### Reporting guidelines for main study types

Randomised trials	<u>CONSORT</u>	Extensions		
<b>Observational</b>				
studies	<u>STROBE</u>	Extensions		
Systematic reviews	PRISMA	Extensions		
Study protocols	<u>SPIRIT</u>	PRISMA-P		
Diagnostic/prognost	1			
ic studies	<u>STARD</u>	TRIPOD		
Case reports	CARE	Extensions		
Clinical practice				
<u>guidelines</u>	<u>AGREE</u>	<u>RIGHT</u>		
Qualitative research	<u>SRQR</u>	COREQ		
<u>Animal pre-clinical</u> studies	ARRIVE			
Quality improvement	+			
studies	SQUIRE	Extensions		
<b>Economic</b>				
evaluations	<u>CHEERS</u>	Extensions		

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https://www.equator-network.org//reporting-guidelines

### Considerations when selecting a journal

- Journal scope: should align with your study aims
  - Special issues
  - Specific sections or types of articles
- Journal's reach/impact
- Publication fees: waivers/reductions for LMIC authors?



	JCR Edition <sup>†</sup>							
Name of Journal	Impact Factor, 2009	Journal Rank, 2009*	Impact Factor, 2008	Science	Social Science	Both	Other Impact Factor Subject Category Listing <sup>‡</sup>	Coun
Advances in Nursing Science	1.414	13	1.211			1		USA
American Journal of Critical Care	1.658	7	2.043	1			Crit Care Med <sup>1</sup>	USA
American Journal of Nursing	0.685	56	1.046			1		USA
Applied Nursing Research	0.871	41	1.086			1		USA
Archives of Psychiatric Nursing	0.897	40	0.732			1	Psychiatry <sup>1,2</sup>	USA
Assistenza Infiermieristica e Ricerca	0.205	71				1		Italy
Australian Journal of Advanced Nursing	0.593	60	0.592			1		Austr
Australian Journal of Rural Health	0.786	50				1	Public Health <sup>1,2</sup>	Austr
Bariatric Nursing & Surgical Patient Care	0.911	37				1		USA
Biological Research for Nursing	0.930	36	1.386	1				USA
Birth: Issues in Perinatal Care	1.919	2	2.836			~	Obstetrics/Gyn <sup>1</sup>	USA
Cancer Nursing	1.878	5	1.705			~	Oncology <sup>1</sup>	USA
CIN: Computers, Informatics, Nursing	0.953	31	0.968			1	Med Informatics <sup>1</sup>	USA
Clinical Nurse Specialist	0.737	52	0.906			1		USA
Contemporary Nurse	0.497	64				1		Austr
Critical Care Nurse	1.031	27	1.119			1	Crit Care Med <sup>1</sup>	USA
European Journal of Oncology Nursing	1.126	22	0.976	1				USA
Gastroenterology Nursing	0.465	66	0.538			1	Gastroenterology <sup>1</sup>	USA
Geriatric Nursing	0.789	49	0.512			1	Geriat/Gerontol <sup>1,2</sup>	USA
Heart & Lung	1.036	26	1.094	1			Cardiac <sup>1</sup>	USA
International Journal of Nursing Studies	1.910	3	2.310			1		Engla
International Journal of Urological Nursing	0.424	67				1		Engla
International Nursing Review	0.693	54	0.644					Switz
Japanese Journal of Nursing Science	0.333	70				1		Japan
Journal of Addictions Nursing	0.171	72	0.316			-	Substance abuse <sup>1,2</sup>	USA
Journal of Advanced Nursing	1.518	10	1.654			1		Engla
J. Am. Academy of Nurse Practitioners	0.907	38	0.823			-	Health Care Serv <sup>1</sup>	USA
J. of the Assoc. of Nurses in AIDS Care	0.957	31	0.712			-		USA
Journal of Cardiovascular Nursing	1.533	9	1.471			1	Cardiac <sup>1</sup>	USA
Journal of Clinical Nursing	1.194	17	1.376			-		Engla
Journal of Community Health Nursing	0.559	62	0.842			-		USA
Journal of Emergency Nursing	0.359	69	0.399			1	Emergency Med <sup>1</sup>	USA

### Impact factor

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Every paper has a home: Tools to find journals

- VUMC's SPI-Hub <u>spi-hub.app.vumc.org</u>
- Journal Table of Contents "TOCs" journaltocs.hw.ac.uk
- Journal/Author Name Estimator "JANE" jane.biosemantics.org

### Be aware of predatory journals

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### Writing for publication

- Carefully review journal guidelines!
  - Word count, citation style, number of tables, heading style
- Write the easiest sections first
  - Methods: What did you do and how did you do it?
  - Results: What did you find? Present without interpretation
  - Introduction: Why did you do what you did? What have others already done?
  - Discussion: What did you learn? How do your results fit with what others have shown?

Submitting an article

- Double check guidelines and format
- Pre-submission inquiry (maybe)
- Cover letter to editor



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You've submitted! Now what?

- Wait! Timing of response depends on decision and journal
  - After sending your submission, you may hear back within 1 week to 6+ months
- Manuscript journey
  - 1. Journal editor makes first decision (sometimes based on abstract and cover letter)
  - 2. Sent to topic-area editor for review
  - 3. Sent to 2-3 reviewers for review and comments

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### Congratulations! Time for revisions

- Very few papers are accepted without a revision cycle
- If revision is recommended, track changes in your manuscript and address each comment point-by-point in a response letter

Dear Dr. Editor:
Thank you for your favorable consideration of the manuscript TMIH-D-12-00533, "What we did and what we found: a research article about our study." We thank the reviewers for their comments, which have given us the opportunity to further improve our manuscript. In this document, we address each comment point-by-point and reply to each of the comments raised. Revisions to the text in response to the reviewers' comments are tracked in the revised manuscript.
Reviewer #1
Comment: [paste comment here] Response: [reply here]

- You can respectfully disagree with points but provide your rationale
- Revision is often time-sensitive

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## Acceptance!



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# Reviewing Manuscripts

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### Criteria for manuscripts to be published

Differ by journal, but in general:

- Innovation/novel approach
- Technical soundness of the work
- Rigor of the analysis
- Adherence to data sharing standards
- Clarity of the English language usage
  - Some journals copy edit, others don't
- Adherence to standards for research ethics and dual publication

### Reviewing manuscripts for publication

- Consider previous studies and originality of current work
  - Does it fill a research gap?
- Methods must make sense
  - Was the study design appropriate for the research question
  - Was the sample size sufficient to answer the question and impact the literature
  - Potential biases, confounding and methodological errors
  - Are conclusions appropriate based on the study design and results
  - Generalizability of results
  - Limitations
- Contribution to field and connection to previous/future research

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### Reviewer decision

- Journal provides specific form to complete with text boxes
  - OK to write comments in Word document and attach
- Decision Options
  - Decline
  - Major revision
  - □ Minor revision
  - Accept
- Don't be afraid to reject!
  - It's not your job as a reviewer to make substantial edits and suggestions

# Questions?

elizabeth.rose@vumc.org

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