Appendix 1

List of topics and learning objectives

Topics	Learning Objectives
1. Introduction to scientific writing workshop	• Understand the principles of clear scientific writing • Develop an awareness of different writing styles • Apply practical writing techniques • Engage the audience effectively
2. Word choice	• Understand the importance of word choice in scientific writing • Simplify language without losing meaning • Avoid common word-choice mistakes • Apply proper abbreviation usage • Distinguish between synonyms and near-synonyms
3. Sentence structure	• Understand the basic principles of sentence clarity • Use active voice over passive voice • Apply parallelism in writing • Avoid problematic comparisons
4. Paragraph structure	• Understand the basic elements of a well-structured paragraph • Use topic sentences effectively • Maintain continuity within and between paragraphs • Use parallel structure for parallel ideas
5. Manuscript elements and introduction	• Understand the classic elements of a scientific manuscript • Recognize the functions of the Introduction • Keep the Introduction concise and focused • Write a clear research question or hypothesis • Apply continuity techniques within the Introduction
6. Methods	• Understand the function of the Methods section

- Identify the key elements of the Methods section
- Determine the appropriate level of detail
- Effectively describe data analysis
- Use subsections and transitions to improve clarity
- Avoid mixing results with methods

7. Results
   - Understand the difference between data and results
   - Select the appropriate results to include
   - Summarize results effectively
   - Refer to figures and tables appropriately
   - Use precise language and avoid ambiguity
8. Discussion
   - Understand the function of the Discussion section
   - Effectively organize the Discussion
   - Avoid common pitfalls in beginning the Discussion
   - Develop a coherent flow with topic sentences
   - Explain and defend the answer logically
   - Explain discrepancies and limitations
   - Conclude effectively
   - Address conflicting results
9. Figures and tables
   - Understand the purpose of figures and tables
   - Select and organize figures and tables effectively
   - Apply general guidelines for figure design
   - Write effective figure legends
   - Handle complex or multipanel figures
   - Avoid common mistakes in figure and table design
10. References
    - Understand the purpose of references
    - Select appropriate references
    - Ensure correct citation formatting

	• Identify common referencing errors • Use reference management software effectively • Follow citation guidelines for different sections of the manuscript
11. Abstract	• Understand the purpose of an abstract • Write a concise, standalone summary • Follow a structured writing process • Use appropriate structure and transitions
12. Title	• Understand the standard structure of a title • Craft precise and informative titles
13. Preparation for submission	• Understand key considerations when choosing a journal • Familiarize with journal formatting requirements • Use AI tools for journal selection • Write effective cover letters • Handle rebuttals professionally • Reflect on authorship and writing standpoint

Appendix 2

UGHE/Duke Scientific Writing Workshop, Pre-Course Survey

i) Sociodemographic

1. Sex

Male

Female

Other

Choose not to answer

2. What is your highest level of academic training?

Undergraduate degree

Master's degree

Medical degree

PhD

Other

3. If you are a current student, what level program are you enrolled in?

Undergraduate

Master's

Medical

PhD

Other

4. What do you envision as your main career goal?

Clinician

Research scientist

Combined clinical/research

Others- please specify *free text*

5. Is English one of your primary languages?

Yes

No

If no, please your primary language- please specify *free text*

6. Is Rwanda your primary residence?

Yes

No

If no, please identify your residence- please specify *free text*

ii) Knowledge of scientific writing

1. Have you ever written a scientific research manuscript before (as primary author) for publication?

Yes

No

2. Use one word to describe how you feel now about your ability to write a scientific research paper for publication.

Please free text

3. On a scale of 1-5 (SA/A/N/D/SD), please describe how you feel about the following statement(s).

- I have a good understanding of the need to demonstrate the ability to adapt clinical or discipline-specific skills and practice in a resource-constrained setting. (UGHE DOMAIN 7. Professional Practice)
- I have a good understanding of the elements involved in a scientific research paper. (UGHE DOMAIN 7. Professional Practice)
- I feel comfortable preparing a scientific research manuscript for publication.

Appendix 3

UGHE/Duke Scientific Writing Workshop, Post-Course Survey

1. Describe how you feel now about your ability to write a scientific research paper.

Please free text

2. On a scale of 1-5 (SA/A/N/D/SD), please describe how you feel about the following statement(s).

- I have a good understanding of the need to demonstrate the ability to adapt clinical or discipline-specific skills and practice in a resource- constrained setting. (UGHE DOMAIN 7. Professional Practice)
- I have a good understanding of the elements involved in a scientific research paper.
- This workshop fulfilled my need to improve my skills in scientific writing.
- The length, content, and style of the workshop were appropriate for my needs.

3. Please give one (or more) suggestion(s) to improve this workshop for future learners.

Appendix 4

Checklist for Reporting Of Survey Studies (CROSS) checklist

CROSS Checklist (Appendix 1)

Section/topic	Item	Item description	Reported on page #
Title and abstract			**1-2**
Title and abstract	1a	State the word "survey" along with a commonly used term in title or abstract to introduce the study's design.	
	1b	Provide an informative summary in the abstract, covering background, objectives, methods, findings/results, interpretation/discussion, and conclusions.	
Introduction			**4**
Background	2	Provide a background about the rationale of study, what has been previously done, and why this survey is needed.	
Purpose/aim	3	Identify specific purposes, aims, goals, or objectives of the study.	
Methods			**5-6**
Study design	4	Specify the study design in the methods section with a commonly used term (e.g., cross-sectional or longitudinal).	
Data collection methods	5a	Describe the questionnaire (e.g., number of sections, number of questions, number and names of instruments used).	
	5b	Describe all questionnaire instruments that were used in the survey to measure particular concepts. Report target population, reported validity and reliability information, scoring/classification procedure, and reference links (if any).	
	5c	Provide information on pretesting of the questionnaire, if performed (in the article or in an online supplement). Report the method of pretesting, number of times questionnaire was pre-tested, number and demographics of participants used for pretesting, and the level of similarity of demographics between pre-testing participants and sample population.	
	5d	Questionnaire if possible, should be fully provided (in the article, or as appendices or as an online supplement).	
Sample characteristics	6a	Describe the study population (i.e., background, locations, eligibility criteria for participant inclusion in survey, exclusion criteria).	
	6b	Describe the sampling techniques used (e.g., single stage or multistage sampling, simple random sampling, stratified sampling, cluster sampling, convenience sampling). Specify the locations of sample participants whenever clustered sampling was applied.	
	6c	Provide information on sample size, along with details of sample size calculation.	
	6d	Describe how representative the sample is of the study population (or target population if possible), particularly for population-based surveys.	
Survey administration	7a	Provide information on modes of questionnaire administration, including the type and number of contacts, the location where the survey was conducted (e.g., outpatient room or by use of online tools, such as SurveyMonkey).	
	7b	Provide information of survey's time frame, such as periods of recruitment, exposure, and follow-up days.	
	7c	Provide information on the entry process: –>For non-web-based surveys, provide approaches to minimize human error in data entry. –>For web-based surveys, provide approaches to prevent "multiple participation" of participants.	
Study preparation	8	Describe any preparation process before conducting the survey (e.g., interviewers' training process, advertising the survey).	

Ethical considerations	9a	Provide information on ethical approval for the survey if obtained, including informed consent, institutional review board [IRB] approval, Helsinki declaration, and good clinical practice [GCP] declaration (as appropriate).	
	9b	Provide information about survey anonymity and confidentiality and describe what mechanisms were used to protect unauthorized access.	
Statistical analysis	10a	Describe statistical methods and analytical approach. Report the statistical software that was used for data analysis.	
	10b	Report any modification of variables used in the analysis, along with reference (if available).	
	10c	Report details about how missing data was handled. Include rate of missing items, missing data mechanism (i.e., missing completely at random [MCAR], missing at random [MAR] or missing not at random [MNAR]) and methods used to deal with missing data (e.g., multiple imputation).	
	10d	State how non-response error was addressed.	
	10e	For longitudinal surveys, state how loss to follow-up was addressed.	
	10f	Indicate whether any methods such as weighting of items or propensity scores have been used to adjust for non-representativeness of the sample.	
	10g	Describe any sensitivity analysis conducted.	
Results			**7-8**
Respondent characteristics	11a	Report numbers of individuals at each stage of the study. Consider using a flow diagram, if possible.	
	11b	Provide reasons for non-participation at each stage, if possible.	
	11c	Report response rate, present the definition of response rate or the formula used to calculate response rate.	
	11d	Provide information to define how unique visitors are determined. Report number of unique visitors along with relevant proportions (e.g., view proportion, participation proportion, completion proportion).	
Descriptive results	12	Provide characteristics of study participants, as well as information on potential confounders and assessed outcomes.	
Main findings	13a	Give unadjusted estimates and, if applicable, confounder-adjusted estimates along with 95% confidence intervals and p-values.	
	13b	For multivariable analysis, provide information on the model building process, model fit statistics, and model assumptions (as appropriate).	
	13c	Provide details about any sensitivity analysis performed. If there are considerable amount of missing data, report sensitivity analyses comparing the results of complete cases with that of the imputed dataset (if possible).	
Discussion			**8-10**
Limitations	14	Discuss the limitations of the study, considering sources of potential biases and imprecisions, such as non-representativeness of sample, study design, important uncontrolled confounders.	
Interpretations	15	Give a cautious overall interpretation of results, based on potential biases and imprecisions and suggest areas for future research.	
Generalizability	16	Discuss the external validity of the results.	
Other sections			**11**

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Role of funding source	17	State whether any funding organization has had any roles in the survey's design, implementation, and analysis.
Conflict of interest	18	Declare any potential conflict of interest.
Acknowledgements	19	Provide names of organizations/persons that are acknowledged along with their contribution to the research.