MSc in Clinical Nutrition

CLINICAL NUTRITION RESEARCH PROJECT GUIDELINES

Graduate Studies and Research Committee

Clinical Nutrition Department, Umm Al-Qura University

MSc Research Project Guidelines

Version 1.0

October 2020

Graduate Studies and Research committee

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Research Project

You are required to submit a project in the 2nd term at the 2nd year of your master. You have to follow the guidelines in this booklet.

Elements of Research Project

A scientific paper needs to include the following elements: title, authors, abstract, keywords, introduction, methods, results, discussion, and references/bibliography.

- The actual words "Introduction", "Methods," etc. are used to head the sections of your paper.
- Begin a new page for each section.

TITLE

The title must explain what the paper is broadly about. It is your first (and probably only) opportunity to attract the reader's attention.

- It should reflect the content of the manuscript.
- Keep the title informative and concise (clear, descriptive, and not too long).
- You must avoid technical jargon and abbreviations, if possible. This is because you need to attract a wider audience.
- Use a title case (capitalize the first letter of each word except for short conjunctions, short prepositions, and articles).

AUTHORS

The authors' names declare the intellectual ownership of the work, provide contact information

1. Decision on authorship**:**

   Every person that contributed significantly to the literature search, literature exploration and/or writing process.

2. Order of authors**:**

   Authors between first and last author have contributed in one way or the other to the success of the project. They may be ordered alphabetically (indicating equality) or in a sequence of decreasing involvement.

ABSTRACT

The abstract is a one or two paragraph condensation (200-250 words) of the entire work described in the article. The abstract should be a self-contained unit capable of being understood without the benefit of the text. It should contain these five elements:

1. Background (introduction);
2. the purpose of the study (the central question);

3. a brief statement of what was done (Methods);
4. a brief statement of what was found (Results);
5. a brief statement of what was concluded (Discussion, in part)

Tense to be used

- Objectives: present
- Material and methods and results: past
- Conclusions: present

KEYWORDS

Keywords are used for indexing the paper.

- avoid words with a broad meaning and words already included in the title.
- only abbreviations firmly established in the field are eligible (e.g., DNA, RNA, RDA, EAR), avoiding those which are not broadly used (e.g., EBA, MMI).

INTRODUCTION

The function of an introduction is to present the question being asked and place it in the context of what is already known about the topic. **Background** information is usually mentioned here, including why the topic is of interest and what previous research findings are.

In other words, this section should contain

1. a description of the nature of the problem and current state of knowledge or understanding at the beginning of the investigation;
2. a statement of the purpose, scope, and general method of investigation in your study; and
3. hypothesis/hypotheses and predictions.

Remember that the Introduction is meant to introduce the reader to your research, not summarize and evaluate all past literature on the subject (which is the purpose of a review paper).

The statement of purpose expresses the central question you are asking and thus presents the variable you are investigating.

Examples:
1-This study **investigates the** relationship between keto diet and lipid metabolism.
2- **The purpose** of this study is to determine the effect of vegan diet on hypothyroidism.

The hypothesis is the explanation you are proposing for certain observations.
It is a tentative answer to the question you have posed above. It should be accompanied by a prediction of results expected under certain conditions if the hypothesis is correct.

Examples:

Consumption of a ketogenic diet among adults for 4 weeks is associated with 10% reduction in triglycerides.

METHODS

The function of this section is to describe all experimental procedures, including controls. The description should be complete enough to enable someone else to repeat your work. If there is more than one part of the experiment, it is a good idea to describe your methods and present your results in the same order in each section. This may not be the same order in which the experiments were performed; it is up to you to decide what order of presentation will make the most sense to your reader.

1. Explain why each procedure was done, i.e., what variables were you measuring and why?
2. Experimental procedures and results are narrated in the **past tense** (what you did, what you found, etc.), whereas conclusions from your results are given in the present tense.
3. Statistical tests are considered mathematical methods and should be described in this section along with the actual experimental work.
4. Use passive rather than active voice when possible. Throughout the paper, avoid contractions, e.g. did not vs. didn't.
5. If any of your methods is fully described in a previous publication (yours or someone else's), you can cite that instead of describing the procedure again.

Example: Thus, it is not surprising that the prevalence of RFS is unknown. There is a partly lacking of robust epidemiological studies due to the absence of internationally approved diagnostic criteria for detecting RFS (Ahmed *et al.*, 2011; Janssen *et al.*, 2019).
Or
Kaderbay *et al.* (2018) observed that RFS is not well known among head and neck cancer teams and that may be related to the lack of nutritional topics in medical and oncology specialist training.

RESULTS

The function of this section is to summarize general trends in the data without comment, bias, or interpretation. Statistical tests applied to your data are reported in this section (under tables or figures), although conclusions about your original hypotheses are saved for the Discussion section. Data may be presented in figures and tables, but this may not substitute for a verbal summary of the findings. The text should be understandable by someone who has not seen your figures and tables.

Example:
Incorrect: The results are given in Figure 1.
Correct: Temperature was directly proportional to metabolic rate (Fig. 1).

- All results should be presented, including those that do not support the hypothesis.
- Statements made in the text must be supported by the results contained in figures and tables.
- The results of statistical tests can be presented in parentheses following a verbal description.

- Example: Vegan diet reduced the antibodies significantly compared with the control diet ($p < 0.05$).

DISCUSSION

The function of this section is to interpret the data and relate them to other studies. To "interpret" means to evaluate the meaning of your results in terms of the original question or hypothesis and point out their biological significance.

1. The Discussion should contain at least:
   - the relationship between the results and the original hypothesis, i.e., whether they support the hypothesis, or cause it to be rejected or modified.
   - an integration of your results with those of previous studies in order to arrive at explanations for the observed phenomena.
   - possible explanations for unexpected results and observations, phrased as hypotheses that can be tested be realistic experimental procedures, which you should describe.
2. Trends that are not statistically significant can still be discussed if they are suggestive or interesting but cannot be made the basis for conclusions as if they were significant.
3. Avoid redundancy between the Results and the Discussion section. Do not repeat detailed descriptions of the data and results in the Discussion.
4. End the Discussion with a summary or conclusions of the principal points you want the reader to remember. This is also the appropriate place to propose specific **further study** if that will serve some purpose.

ACKNOWLEDGEMENTS

This section can be used to thank people who have contributed to the manuscript, the people who supported the research project, even at the personal level but not to the extent where that would justify authorship.
For example, here you can include technical help and assistance with writing and proofreading. Probably, the most important thing is to thank your funding agency or the agency giving you a grant or fellowship.

REFERENCES

Use APA or Harvard style. Use a reference manager to facilitate this process (e.g RefWorks, EndNote, Mendeley, Zotero), but remember to visually check your reference list.

For more information about refrenceing:
https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/in_text_citations_author_authors.html

Review Project

Review is a critical, constructive analysis of the literature in a specific field through summary, classification, analysis, and comparison.

- A scientific text relying on previously published literature or data. New data from the author's experiments are not presented (with exceptions: some reviews contain new data).
- A stand-alone publication. Literature reviews as integral parts of master theses, doctoral theses or grant proposals will not be considered here. However, many tips in this guideline are transferable to these text types.

Types of review articles

I. Types by methodological approach

Narrative review

Selected studies are compared and summarized on the basis of the author's experience, existing theories and models. Results are based on a qualitative rather than a quantitative level.

Best evidence review

A focus on selected studies is combined with systematic methods of study-selection and result exploration.

Systematic review

Findings from various individual studies are analyzed statistically by strict procedures. Meta-Analyses are used to pool the results of individual studies.

II. Types by objective

- **Status quo review**
  Presentation of the most current research for a given topic or field of research.
- **History review**
  Development of a field of research over time.
- **Issue review**
  Investigation of an issue (i.e. a point of disagreement or a question) in a specific field of research.
- **Theory/model review**
  Introduction of a new theory or model in a specific field of research.

Elements of a Review Project

A scientific review article needs to include the following elements: title, authors, abstract, keywords, introduction, main body, discussion, and references/bibliography.

- The actual words "Introduction", "Main body," etc. are used to head the sections of your paper.
- Begin a new page for each section.

Narrative review:

The structure includes:

- Title
- Abstract
- Introduction
- Body
- Conclusion
- References

Systematic review:

The structure includes:

- Title
- Informative Abstract – informs us this is a meta-analysis (novel analysis in a novel context of previously published data)
- Introduction
- Body – Material & Methods, Results (including the use of tables and figures to display novel findings)
- Discussion
- Conclusion – a listing of novel findings of the meta-analysis
- References

TITLE

As mentioned in **page 1.**

AUTHORS

As mentioned in **page 1.**

ABSTRACT

As mentioned in **page 1.**

KEYWORDS

As mentioned in **page 2.**

INTRODUCTION

The aim of the introduction is to provide information about the context, indicates the motivation for the review, defines the focus, the research question and explains the text structure.

Introduction should contain three elements:

1. **Subject background**. The general topic, issue, or area of concern is given to illustrate the context. (paragraph 1 – 3)
2. **"Problem".** Trends, new perspectives, gaps, conflicts, or a single problem is indicated. (paragraph 4, sentence 1)
3. **Motivation/justification**. The author's reason for reviewing the literature, the approach and the organization of the text are described.

Remember the length of the introduction is between 10% and 20% of the core text (introduction, body, conclusions).

BODY: MATERIAL AND METHODS

Systematic and best evidence reviews have a methods section. **Narrative reviews** do not have a methods section but should include some information about applied methods at the end of the introduction.

The material and methods section contain for example information about: data sources (e.g. bibliographic databases), search terms and search strategies, selection criteria (inclusion/exclusion of studies), the number of studies screened and the number of studies included, statistical methods of meta- analysis.

1. Explain why each procedure was done, i.e., what variables were you measuring and why?
2. Experimental procedures and results are narrated in the **past tense** (what you did, what you found, etc.) whereas conclusions from your results are given in the present tense.

3. Statistical tests are considered mathematical methods and should be described in this section along with the actual experimental work.
4. Use passive rather than active voice when possible. Throughout the paper, avoid contractions, e.g. did not vs. didn't.
5. If any of your methods is fully described in a previous publication (yours or someone else's), you can cite that instead of describing the procedure again.

   Remember the length of this section should be around 5% of the core text (introduction, body, conclusions).

BODY: MAIN PART OF THE REVIEW ARTICLE

Section Structure

A coherent structuring of the topic is necessary to develop the section structure. Subheadings reflect the organization of the topic and indicate the content of the various sections.

For example; Possible criteria for structuring the topic are:

- Methodological approaches
- Models or theories
- Extent of support for a given thesis
- Studies that agree with another versus studies that disagree chronological order

Paragraph structure

- Cover one idea, aspect or topic per paragraph.
- Avoid referring to only one study per paragraph; consider several studies per paragraph instead

Remember the length of the main body is around 70 to 90% of the core text (introduction, body, conclusions).

CONCLUSIONS

It should answer the research question set in the introduction. The elements of the conclusion are

- implications of the findings
- interpretations by the authors (kept separate from factual information)
- identification of unresolved questions

Tense to be used

present: summarizing and drawing conclusions
present perfect: referring to an area of research or a body of literature

Remember the length of this section is around 5 to 10% of the core text (introduction, body, conclusions).

ACKNOWLEDGEMENTS

As mentioned in **page 5**.

REFERENCES

As mentioned in **page 5**.

Stages of Developing a Master's Project

1. Prepare the **figures and tables**.
2. Write the **Methods**.
3. Write up the **Results**.
4. Write the **Discussion**. Finalize the Results and Discussion before writing the Introduction. This is because, if the discussion is insufficient, how can you objectively demonstrate the scientific significance of your work in the introduction?
5. Write a clear **Conclusion**.
6. Write a compelling **Introduction**.
7. Write the **Abstract**.
8. Compose a concise and descriptive **Title**.
9. Select **Keywords** for indexing.
10. Write the **Acknowledgements**.

Formatting

- Paper MUST be typed and double-spaced.
- Use a professional font (e.g. Times New Roman, 12 pt).
- Use only black font color.
- Include section headings.

General Guidelines

- Write clearly; proofread to correct spelling and grammar.
- Use past tense when referring to events of your experiment.
- Keep writing scientific – no informal language.

For example

Avoid:

- words such as "can't" and "should've" need to be spelled out as "cannot" and "should have".
- cliché phrases such as:

Informal Phrase	Scholarly Phrase
Sleeping like the dead	In a deep sleep; Sleeping heavily
On the other hand	Conversely; At the same time
At the end of the day	In the end; In conclusion

- introductory phrases

Introductory Phrase	Corrected
It is important to note	Importantly
In order to	To
The fact that	Because; Since
In terms of	About; Just state the subject
First and foremost	Firstly
Not only A, but B	B also; Additionally, B

- repetitive phrase

- Word count is between 3000-5000 words for research project (not counting abstract, key words, acknowledgement, and references).
- In case of review articles, word count is between 6000- 8000 words (including all parts).
- Number of references should be around 30-50 in the research project, and around 50-80 in the review project (use recent academic journal publications as possible as you can).

Project Submission

SUBMISSION

The submission date will be announced by Graduate Studies and Scientific Research Committee. You must submit the plagiarism report and your writing project. After submission, you will have a viva (an oral test) to defend your work.

Plagiarism should be cheeked before submission and should not exceed 30%. Please contact your supervisor if you need any further information.

ASSESSMENT

a) Research paper (writing up) – 60% of total grade

Supervisors are responsible for evaluating the student work based on the criteria listed in the "Supervisor Assessment Form".

The overall assessment includes:

- Communication/leadership skills

Project leader was assigned; effectiveness of her role was clearly evident by the level of communication and coordination with each other and with the supervisor.

- Project execution skills

Management, Planning, Requirements Analysis, and Design.
The co-supervisor must periodically provide input to the supervisor regarding the activities of each student in the project group, which shall be considered in his/her evaluation.

b) Oral presentation – 40% of total grade

Examination Committee are responsible for evaluating the student oral presentation based on the criteria listed in "Oral Presentation Assessment Form". Two committee members evaluate the presentation individually and an average of all examiners' evaluations are computed to reach the final assigned score.

Research Project Rubric
A requirement of Research Project Course- 1702644-3

Student Name: _____ Thesis Title:_____
_____

Outcome	Points	Total	Comment
Background and Objectives • Abstract has all the main elements and doesn't exceed 200 words • Background/Foundation • Gaps and contribution to knowledge • Research Question/hypothesis • Aims /objectives	10 5 5 5 5	30	
Methodology • Method included the study design, how data was collected, and statistical analysis • The method was detailed and explained clearly • Methods used were valid to answer the research question	10 5 5	20	
Results • Results were presented in appropriate figures /tables • Data was correctly interpreted in text • Results were clearly and logically presented • Main results were connected (relevant) to the research question	5 5 5 5	20	
Discussion • Linking/compared results to current literature • Results were clearly justified • Strengths and limitations were adequately acknowledged • Conclusion and recommendations for future work	5 5 5 5	20	
References • Information is gathered from multiple, research-based sources. • Citation was used correctly inside the written body	2 3	5	
Writing • Writing is clear and concise. Ideas are well developed and coherent. • No grammatical, punctuation and spelling errors • Follows formatting requirements (title; words limit; organization with subheading; font size..etc.)	5 5 5	15	
Data collection • Student was in contact with her supervisor • Student can solve research obstacles that come up • communicated effectively	10	10	
		Points: 120/2 **Final mark: 60**	
Results			

Evaluator:_____
Date:_____

Viva and Presentation Rubric
A requirement of Research Project Course- 1702644-3

Student Name:_____ Thesis Title:_____

Outcome	Points	Total	Comment
Description of Relevance • Provides sufficient background information • Identifies trial purpose/importance • Identifies study question/objective(s)	5 5 5	15	
Knowledge of Field of Study • Demonstrates understanding of the Subject • Shows awareness of current discussions on the topic • Place thesis in either scientific or practical context	10 5 5	20	
Argument • Clearly articulates a position or argument • Presents evidence that is relevant and accurate	5 5	10	
Complete Explanation of Results, Analysis Discussion • Appropriately explains: o Data and Statistical Analysis o Results: All figures, tables and graphics etc.) are clear and explain o Discussion (Significance exceptionally well explained Conclusions o Suggestions for further research	5 5 5 5	20	
Ability to Answer Questions • Answers logically and accurately • Ability to think under pressure • May attempt to answer if unsure, but clearly specifies uncertainty if necessary • Defends the thesis well	10 5 5 10	30	
Communication • Flow of information (logical; clear; easy to follow) • Communication and Presentation o Verbal (pace & voice level were appropriate) o Non-verbal (confident; good eye contact; no distracting gestures; professional) o Written (clear slides; good layout; effective use of graphics • Time limit (15 minutes)	5 5 5 5 5	25	
Total: total points 120 divided by 3 The final marks 40		**Points: 120/3** **Final mark: 40**	

Evaluator:_____
Date:_____