STANDARD OPERATING PROCEDURE

Undergraduate Research Project

Title:	**Standard Operating Procedure for Undergraduate Research Project**	
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Prepared by	**Department of Community Medicine, Faculty of Medical Sciences, University of Sri Jayewardenepura**	
Approved by		
Department of Community Medicine		**03/03/2023**
Faculty of Medical Sciences		**08/03/2023**
Senate of the University of Sri Jayewardenepura		**27/04/2023**

SOP Undergraduate Research Project, Faculty of Medical Sciences, University of Sri Jayewardenepura

Compiled, edited and approved by the Department of Community Medicine

Accepted by

Name and Position	Signature	Date
Senior Prof. Aloka Pathirana, Dean, Faculty of Medical Sciences, University of Sri Jayewardenepura	Prof. Aloka Pathirana Dean Faculty of Medical Sciences University of Sri Jayewardenepura Nugegoda, Sri Lanka.	4/05/23.
Vice Chancellor, University of Sri Jayewardenepura		08.05.2023

Acting Vice Chancellor
University of Sri Jayewardenepura
Nugegoda, Sri Lanka.

Abbreviations

DCM	Department of Community Medicine
ERC	Ethics Review Committee
FMS	Faculty of Medical Sciences
MBBS	Bachelor of Medicine and Bachelor of Surgery
PLO	Programme Learning Outcomes
SLQF	Sri Lanka Qualifications Framework
SOP	Standard Operating Procedure
URP	Undergraduate Research Project
USJ	University of Sri Jayewardenepura

Contents

1. General

Medical undergraduates in the Faculty of Medical Sciences [FMS] of the University of Sri Jayewardenepura [USJ] must conduct a supervised Undergraduate Research Project [URP] and submit a dissertation as a component of their training and assessment in the subject of Community Medicine. These standard operating procedures cover the procedures for this URP.

1.1 **Purpose of the URP**

1.1.1 The research project in Community Medicine, accounts for 20% of the total marks in Community Medicine at the Second Examination for Bachelor of Medicine and Bachelor of Surgery (MBBS) Degree [Part II].

1.1.2 The Programme Learning Outcomes (PLO) as per the graduate profile of the FMS, USJ, include scientific basis of medicine, critical thinking, research and evidence based medicine, communication skills, information usage and management, health promotion and disease prevention, ethical responsibilities, communication skills, professional and personal development. The URP helps to achieve these PLOs by engaging in this project.

1.1.3 The standard benchmark statement of the University Grants Commission for Medicine requires a graduate to have critical thinking and research attributes. The URP helps the students to achieve these attributes.

1.1.4 As per the requirements of SLQF level 6, the URP will help achieve a total of minimum 6 credits[1].

1.2 Scope

The URP is an essential component of the curriculum in the university system. This SOP provides guidelines and an academic reference point for the URP, is not prescriptive, and is meant to be used as a guideline for the URP.

1.3 Expected learning outcomes of URP

Students should be able to

1.3.1 critically appraise medical literature to inform research
1.3.2 analysis a basic research project
1.3.3 conduct a basic research project
1.3.4 interpret and communication research finding

2. Preliminaries, duration and structure of the URP

2.1 Preliminaries

2.1.1 An introduction to the URP will be conducted by a senior academic member or the research coordinator (Annex I) from the Department of Community Medicine [DCM] at the beginning of the URP.

2.1.2 Guideline/s relevant to the URP will be made available to the undergraduates at the beginning of their URP or provided at relevant stages of the URP by the DCM.

2.1.3 Students are required to maintain an attendance log to document their meetings with the supervisors.

2.1.4 Limited funds may be made available from the USJ to cover some expenses that the students may incur for the URP.

2.2 Duration

2.2.1 The duration of URP is approximately one year. The research groups must submit their final URP report by the end of third year.

2.3 Structure

2.3.1 The URP is a group project. Each group will approximately consist of 5 undergraduates.

2.3.2 Each group must conduct a research project under the guidance and supervision of a full time academic staff member holding a qualification of SLQF level 10 or above.

2.3.3 FMS will allocate required hours in the research block in the academic calendar to train and supervise each student in URP to achieve the 6 credits.

3. **Group allocation for the URP**

3.1 Purpose

The students are allocated to work in groups for the URP for them to

3.1.1 work as a team while performing independent learning activities,
3.1.2 have interactive team discussions and team-based learning
3.1.3 showcase the ability of each member in the group to act as an effective team member
3.1.4 show leadership qualities
3.1.5 encourage delegation of work and undertake delegated work

3.2 Group allocation procedure

3.2.1 Undergraduates belonging to each clinical group will be allocated to a research group of 5 by the DCM.

3.2.2 All members of a given research group must belong to the same clinical group. When the number of undergraduates in a clinical group is not completely divisible by 5, research groups with fewer undergraduates will be supplemented with undergraduates from other clinical groups at the discretion of the DCM to form research groups of 5.

3.2.3 Individual preferences of undergraduates will not be considered when allocating to and approving research groups.

3.2.4 Once the research groups are finalised, each group must elect a group leader.

3.2.5 The group leader must submit his/her contact details to the DCM.

3.2.6 The group leader must be the focal point for all communications with the DCM and with the staff that supervise the research projects.

3.2.7 Another group member would be designated as "treasurer" and would be responsible for any funds obtained from the USJ.

4. Selection of research topics

4.1 Purpose

The selection of topic should seek to engage students in a variety of learning activities that would encourage diversity, flexibility, accessibility and autonomy of learning, and at the same time produce compatibility between curriculum and student-centred teaching methods. The topic selection process allows flexibility in students' choices of the area that the research could be performed. To ensure relevance to a medical career, the topics that are chosen must be relevant to human health and well-being.

4.2 Procedure for selection of research topics

4.2.1 After the introductory lecture [see 2.1.1], members of each research group must discuss options for a suitable research topic and select one topic. The selection of the research topic must not be influenced by any other individual. Each group may select two [02] additional topics to be considered if the first one is not accepted.

4.2.2 Each research group must peruse the research topics and objectives of the undergraduates in the preceding five years when selecting the research topic. The list of topics conducted by the DCM can be found in the DCM web site. Re-research of a topic covered by any undergraduate research group within the preceding five years will not be permitted.

4.2.3 The chosen topic must be submitted to the DCM. Each group may submit one [01] additional topic.

4.2.4 At the time of submission of topics, the research group leaders must enter the following information into a log book maintained at the DCM: topic/s, research group number, names and MED numbers of research group members with the name of the group leader as the first name, contact phone number and email address of the group leader, date and time of the submission.

4.2.5 DCM will assess the submitted topics. The outcome of this assessment will include

i. approval of the submitted topic
ii. approval of the topic subject to modifications
iii. rejection of the topic.

4.2.6 Irrespective of the outcomes of the above assessment, the students will continue with their research methodology lectures.

4.2.7 Based on the research topic/area students will be allocated to supervisor/s with similar research interests.

4.2.8 When a topic is approved, the respective research group is allowed to proceed to develop research objectives.

4.2.9 When a topic is approved subject to modifications, the respective research group must discuss within the group and with the allocated supervisor and re-submit the revised topic for approval. The DCM will re-assess the revised topic and approve if the revision is satisfactory.

4.2.10 When a topic is rejected, the respective research group must discuss within the group and with the allocated supervisor and re-submit a new topic for approval. The DCM will re-assess the new topic and approve if it is acceptable.

4.2.11 If a research group has submitted more than one topic and the first topic is not acceptable, the second option will then be considered. If both topics are not acceptable, a new topic must be submitted.

4.2.12 When two research groups have submitted similar topics, the group that submitted first will own that topic. The other group/s must submit new or revised topics. The optional second topic will also be considered in the same manner.

4.2.13 No staff member must offer or indicate to facilitate undergraduate research prior to their appointment by the DCM as a supervisor to a research project, unless officially requested by the DCM.

4.3 Deliverables

i The research groups will submit the final title to the DCM on before a deadline provided by the DCM.

5. Formulation of research question and objectives

5.1 Purpose

The formulation of general and specific objectives should seek to develop the skills in students in accessing literature and assessing knowledge gaps that needs addressing. This process allows flexibility in students' choices in deciding the areas where the knowledge could be advanced.

5.2 Procedure for selection of research question and objectives

5.2.1 Each group must formulate the research question

5.2.2 Based on the research question, must formulate at least one general objective and two [02] specific objectives.

5.2.3 The titles, justification, general objective and specific objectives should be presented to the staff of the DCM after obtaining approval from the relevant supervisor.

5.2.4 The staff will assess the appropriateness of these objectives and its relevance to the title. The outcome of this assessment will include

i. approval of the objectives
ii. approval of the objectives subject to modifications
iii. rejection of the objectives

5.2.5 When objectives are approved subject to modifications, the respective research group must discuss within the group and with the supervisor and re-submit the revised objectives for approval. The DCM will re-assess the revised objectives and approve if these are satisfactory.

5.2.5 When objectives are rejected, the respective research group must discuss within the group and with the supervisor and re-submit new objectives for approval. The DCM will re-assess the new objectives and approve if they are acceptable.

5.3 Assessment

5.3.1 The presentation of the final title and the general and specific objectives that will be made by the group of students will be formatively assessed.

5.3.2 The outcome of this formative assessment will include

i. approval of the final title and research objectives
ii. approval of the final title and research objectives subject to modifications
iii. rejection of the research objectives

6. Development of the research proposal

6.1 Purpose

The development of the research proposal should seek to engage students in a variety of learning activities that would encourage diversity, flexibility, accessibility and autonomy of learning, and at the same time produce compatibility between curriculum and student-centred teaching methods. The study setting, study population, tool selected allows flexibility in students' choices for the research to be performed.

6.2 Scope

The research protocol should contain all components as per a standard proposal which should also be in par with the conditions as stipulated by the Ethics Review Committee [ERC] of the FMS, USJ.

6.3 Detailed instructions

6.3.1 When research objectives are approved, the respective research group is allowed to proceed to developing the research methodology.

6.3.2 After the approval of research objectives, each research group must perform a literature review.

6.3.3 DCM will conduct a hands-on session on literature review to facilitate this the literature search.

6.3.4 The literature review will be formatively assessed and the suggestions for revisions will be made available to the group for improvement.

6.3.5 After the satisfactory completion of the literature review, each research group must develop the methodology for the respective research project in consultation with the supervisor/s.

6.3.6 Once the research methodology is developed, each research group must make an oral presentation to the staff of the DCM. This presentation must include the approved topic, justification, objectives and the proposed methodology.

6.3.7 The contents in the presentation would be formatively assessed and the outcome of this assessment will include

i. approval of the methods
ii. approval of the methods subject to minor modifications
iii. approval of the methods subject to major modifications

6.3.8 If the methodology is approved, the respective research group may proceed to develop the study protocol for ethical clearance.

6.3.9 If any revision to the methodology is required, the methodology must be revised under the guidance of the supervisor/s for consideration and approval.

6.3.10 Once the protocol is finalized, each research group must submit the respective research protocol for ethical clearance through the supervisor/s and the Head of DCM to the ERC of the FMS.

6.3.11 The ERC will hold a special meeting to assess the applications for ethical clearance of URPs. If any revisions are required after ERC review, the respective research group must make the required changes and resubmit using the same channel of communication mentioned above.

6.3.12 Once the ethical approval is granted by the ERC, the respective research groups will proceed to data collection.

6.3.13 Administrative clearance to conduct the research in other institutions will be facilitated by the DCM.

6.3.14 A supervisor-certified attendance log should be maintained to record meetings with supervisor/s. A minimum of 80% is required among a minimum of four visits with the supervisor/s at this stage.

6.4 Deliverables

6.4.1 Submission of the final title with the general objective/s and the specific objectives, with the literature review by each group.

6.4.2 Oral presentation made by each research group on methodology.

6.4.3 A detailed protocol, with a duly completed ethics application and the necessary letters to the ERC

6.4.4 Submission of supervisor-certified attendance log to the DCM.

6.5 Assessment

6.5.1 The literature review will be formatively assessed and the suggestions for revisions will be made available to the group for improvement.

6.5.2 The oral presentation by the group will be formatively assessed. This may be integrated with the PPD stream for assessment purpose.

7. Data collection

7.1 Purpose

The graduates should be able to apply scientific methods in terms of using data collection instruments for quality data collection, which would ensure validity, reliability, teamwork and leadership. The data collection procedure will also improve the communication skills of the undergraduates. This exercise would ensure that students will develop skills on information usage and management, networking and social skills.

7.2 Scope

The data collection, which should begin after ethical clearance, and should follow all principles of Helsinki declaration, subject to ethical standards that promote and ensure respect for all human subjects and protect the participants health and rights.

7.3 Detailed instructions

7.3.1 Data collection must be performed by the members of each research group under the guidance of their supervisor/s.

7.3.2 Any deviation in methodology required during data collection must be notified to the ERC through the DCM and the approval of the ERC for any changes must be obtained prior to implementing the change/s.

7.3.3 If any external supervisor has been appointed based on the need for facilitation of data collection, such external supervisor will bear the responsibility of adequately facilitating data collection by the undergraduates.

7.3.4 Data collection should include providing information to participants and obtaining their consent.

7.3.5 The use of secondary data collection is acceptable.

7.3.6 Qualitative research is acceptable if there is a quantitative component in the research that can allow the undergraduates to demonstrate their skills in statistical analyses.

7.3.7 All data collected should be made available to the supervisors/s and to the DCM, if and when needed.

7.3.8 The DCM will conduct a hands-on session to facilitate data entry.

7.4 Deliverables

7.4.1 A dummy database with the necessary variables should be submitted to the supervisors/s by a stipulated deadline.

8. Data entry and analysis

8.1 Purpose

The graduates should be able to apply scientific methods in applying statistical concepts to full-fill the research hypotheses.

8.2 Scope

Data entry, analysis and interpretation of research data applying statistical concepts.

8.3 Detailed instructions

8.3.1 The FMS will make required statistical software available at its IT laboratory for use for URPs. The undergraduates may choose to use their own statistical software.

8.3.2 Data analysis will be performed by each research group under the guidance of their supervisor/s.

8.3.3 The DCM will conduct lectures on statistics.

8.3.4 The DCM will conduct a hands-on session to facilitate data analyses.

8.4 Deliverables

8.4.1 The results section of the research report must be submitted to the DCM by a stipulated the deadline.

9. Communication of research findings

9.1 Purpose

The graduates should be able to demonstrate creativity and resourcefulness in writing and presenting scientific material for problem solving.

9.2 Scope

To write a dissertation and present the scientific material for problem solving at research fora.

9.3 Detailed instructions

9.3.1 Each research group must compile a research report based on the guidelines provided by the DCM under the guidance of respective supervisor/s and submit to the DCM.

9.3.2 If a research group has more than one supervisor, each successive draft of the report/chapters must be emailed to all supervisors simultaneously.

9.3.3 The research report should be signed by all supervisors.

9.3.4 A manuscript approved by supervisors in a form of scientific publication should be submitted along with the research report.

9.3.5 Failing to comply with 9.3.3 & 9.3.4 will be considered as failure in submitting the research report.

9.3.6 Undergraduates should present their findings through an approved abstract by the supervisor/s at a minimum of one scientific conference. Names of all students in the group and the supervisor/s with the affiliations to be included in all abstracts.

9.4 Deliverables

9.4.1 The research dissertation to be submitted to the DCM by a stipulated deadline.

9.4.2 Submission of the supervisor-certified attendance log to the DCM. A minimum of 80% is required among the four meetings recommended to be held with the supervisor/s after the beginning of data collection.

9.4.3 Submission of the final grant report.

10. Assessment of undergraduate research project

10.1 Formative assessments

Following formative assessment will be made during the URP.

10.1.1 Oral presentation on title and objectives

10.1.2 Oral presentation on research methods

10.1.3 Research proposal submitted to ERC

10.1.4 Written submission of literature review

10.1.5 Dummy database

10.2 Summative assessment

10.2.1 Research report and manuscript submitted by each research group will be assessed by two examiners (Annex II). At least one examiner will be an expert not affiliated to the FMS. This assessment will follow contemporary assessment by-laws of FMS.

10.2.2 The average of the marks given by two examiners for the dissertation will carry 50% of the marks awarded to the URP.

10.2.3 The same two examiners will hold a viva voce examination based on the research report for the research group. Although this viva voce examination is conducted for the entire research group collectively, the marks will be given separately for each group member.

10.2.4 If one or both examiners who assessed the research report is absent for the viva voce examination, a substitute examiner/s will be used.

10.2.5 The viva voce examination will carry 50% of the marks awarded to the URP.

10.2.6 URP will carry 20% of the marks for the assessments in Community Medicine subject and will be reported as a component of the Community Medicine marks for the MBBS 2nd Examination Part II.

11. Supervision of undergraduate research project

11.1 Purpose

The supervisor should support the undergraduate medical students to adapt to a learner centred problem solving approach, and to continuously support in achieving success in the URP and to become a competent researcher in future

11.2 Scope

11.2.1 To maintain regular contact between the students and the supervisor/s

11.2.2 To maintain communication as required to achieve the objectives of the URP

11.2.3 To improve in the literature review, methods, results, discussion and other components of the research report and present the scientific material for problem solving at research forums.

11.2.4 To ensure all students contribute equally to each component of the URP

11.3 Detailed instructions

11.3.1 At the time of approval of the topic of the URP, each research group will be allocated to a staff member of the DCM.

11.3.2 After the approval of the research objectives, the DCM will identify an appropriate person with relevant special expertise from within the faculty or extended faculty of the FMS or outside the faculty and extended faculty of the FMS if such expertise is required.

11.3.3 The DCM will then offer the external person with special expertise to become an external supervisor to the relevant research group.

11.3.4 If the external person with special expertise accepts this offer, s/he will be appointed as an external supervisor by the Head of DCM.

11.3.5 If the external person with special expertise declines the offer, another suitable person must be identified by the DCM and the steps 11.3.3-11.3.4 must be repeated.

11.3.6 The supervisor from the DCM for a research group is primarily responsible for overseeing the respective URP.

11.3.7 The external supervisor for a research group is responsible for overseeing the respective URP. She/he is additionally responsible for providing required expert inputs and facilitating the respective URP.

11.3.8 An attendance log will be given to each research group by the DCM. The group leader must ensure that this attendance log is marked when the group meets with the respective internal/external supervisor. Each group must have at least four [04] supervisory meetings prior to the beginning of data collection, and at least four [04] supervisory meetings during the remaining duration of URP. The respective supervisor must sign each attendance log.

11.3.9 Each research group must compile a research report under the guidance of respective supervisors and submit to the DCM.

11.3.10 If a research group has more than one supervisor, each successive draft must be emailed to all supervisors simultaneously.

11.3.11 To ensure participation of all students of the group at all points in the research, the supervisor should ensure the following:

a) The literature review to be divided among the group members and the work to be submitted

11.3.12 The research report should be signed by supervisors

11.3.13 Failing to comply with 11.3.12 will be considered as failure in submitting the research report.

12. Complaints about the conduct of a research project

12.1 Purpose

The purpose of this SOP is to describe the mechanism for receiving, handling and responding to complaints concerning the conduct and assessment of the URP.

12.2 Scope

This SOP applies to all URPs approved by the DCM.

12.3 Detailed instructions

12.3.1 The Head of the DCM will receive the complaints from staff, students or research participants or other interested persons about the conduct of approved research. DCM is responsible for obtaining details of the complaint in writing.

12.3.2 Verbal complaints will not be accepted.

12.3.3 If the Head of DCM has any conflict of interest, the cadre professor of the DCM will receive the complaint.

12.3.4 Any complaints received by the Head of the DCM or the cadre professor of the DCM should be referred to the Department meeting of the DCM.

12.3.5 If the DCM considers the complaint to be of a sufficiently serious nature, they will bring it to the attention of the Dean as soon as possible.

12.3.6 Where the complaint concerns a serious matter within the jurisdiction of the Ministry of Health or other institution the Dean shall consider referral of the complaint to that body.

12.3.7 The Head of the DCM or the cadre professor will send a letter of acknowledgement to the complainant.

12.3.8 The Dean will appoint an Incident Review Committee or will forward the complaint to the examination irregularity committee, or the ERC, whichever deemed necessary, and appropriate action would be undertaken as per the SOP of that respective committee

Report writing

The research report is one of the final outcomes of the research process. Research reports are usually written in the past tense as the research is completed at the time of writing. The important components of a research report are given below.

Format of the Research Report

Should be typed on A4 paper in Times New Roman font size 12 with 1' margins all around with 1.5 lines spacing.

Structure of a Research Report

A Front Matter

B Body

C End material

A Front Matter:

1. Cover page
2. Title page
3. Declaration of authenticity
4. Abstract
5. Acknowledgments
6. Table of contents
7. List of tables
8. List of figures & illustrations
9. List of annexes
10. List of abbreviations & symbols

A1. Cover page:

a) Title - The title should be clear, concise and convey all the important aspects of the study including the study population and the study area. The study design is also given in the title at times.

b) Research team (names and MED Numbers)

c) Names/s of supervisor/s

A2. Title page:

A3. Declaration of authenticity:

A declaration that indicates that the research was conducted by the students under supervision without any assistance from a third party.

A4. Abstract:

Structured abstract consisting of background, objectives, methods, results, conclusions & recommendations and 3-5 key words. It should not exceed 300 words

B. Body:

Chapter 1 - Introduction: background statement, justification and objectives

Chapter 2 - Literature review

Chapter 3 - Methods

Chapter 4 - Results

Chapter 5 - Discussion: Including Limitations

Chapter 6 - Conclusions and Recommendations

Chapter 1 Introduction: Consists of 3 main sections:

- **Background:** Description of the research problem including its definition and the magnitude both globally and at the national level. Should be organized under subheadings as per relevance and include definitions and explanations of terms used in the report.

- **Justification:** This should include the need to do the study and the potential benefits of the research findings in around 400- 500 words

- **Objectives:** General objective and two to three specific objectives Include your conceptual framework

Chapter 2 Literature review: (not more than 2000 words)

- This chapter is to organize the previous research in relation to your research topic.
- Should be structured in an orderly manner according to the specific objectives as far as feasible.
- Begin the chapter by describing the search strategies.
- Include global, regional and local studies as per relevance to the research project.
- For each article reviewed, include a brief description of the objectives, methods (study design, inclusion/exclusion criteria as per relevance, sample size, sampling, data collection, data analysis and essential results (eg: prevalence, Odds Ratios with Confidence Intervals, P values) and conclusions of the given study.
- Do not repeat what has already being described in the Introduction

Chapter 3 Methodology

This chapter should include the following:

- Study design
- Study setting
- Study period
- Study population (inclusion and exclusion criteria)
- Sampling: Sample size calculation and the sampling technique
- Variables and operationalization of variables
- Study instruments
  -
    - All instruments used to be mentioned in detail (with the translations annexed)
    - Following information to be included: information on source of questions – ex: borrowed from similar questionnaires or designed by the trainee or a combination of both; type of questionnaire - interviewer /self-administered; type of questions open/close ended or mixed; broad description of the main components of the questionnaire- ex: Section 1 - Socio-demographic characteristics, Section 2 - Knowledge, Attitudes and Practices on ……;
    - Pre-testing
    - If the questions were assessed using a scale (eg: Likert Scale) details on how the scores were assigned, the minimum and maximum possible overall scores, and the basis for the cutoff levels selected need to be included
  - Pilot study
  - Data collection-
  - Data analysis- mention the descriptive and inferential statistics appropriate to the type of data. The statistical tests and statistical software that was used and the p value that was taken as the significance level and the measure of effect with the relevant 95% confidence interval need to be indicated

- Ethical and administrative issues

Chapter 4 – Results

- Commence the chapter by including a general statement about the total sample size and the response rate. It should be followed by description of the sample in terms of relevant sociodemographic characteristics. The rest of the chapter should be organized as far as feasible according to the sequence of the specific objectives.

- The detailed results should be presented as tables and figures/charts. Only one type of illustrative forms (table or figure and not both) should be used to describe an individual variable.

- Please refer to the 'Guidelines on preparing tables for the research report' (Annex III)

Chapter 5 - Discussion:

- Summary of introduction, general objective, methods and discuss strengths of the study
- Summary of the main findings: should contain minimal data
- Explain the findings: whether the results were anticipated or not and if not explain in terms of sampling, measurements, procedural issues, confounding variables and relate the findings to other studies: consistency/inconsistency of findings
- Public health relevance of the findings

Validity

External and internal validity

Limitations

i Problems related to methods of the study: choice of research design, sampling, assessments and procedures

ii Problems during implementation: sampling issues, non response

- In summary discuss everything but be brief and specific. However, discussion should not be a repetition of results.

Chapter 6 - Conclusions and Recommendations

- Conclusions – should be the answers to the specific objectives written in summary form.
- Recommendations: should be relevant and arising out of the study, should be practical and clearly stated with suggestions for future research (impact on practice)

List of references:

You may use either the Harvard or Vancouver referencing style (Annex IV)

End Material:

Annexure

1. All study instruments and translations
2. Information sheets
3. Consent forms
4. Letter granting ethical approval
5. Administrative clearance
6. Any other

References

University Grants Commission, 2015. *Sri Lanka Qualifications Framework (SLQF)*. UGC: Colombo.

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Annex I

Terms of Reference for Undergraduate Research Module Coordinator

Objectives:

To plan, conduct and monitor the undergraduate research programme

Scope:

I. To coordinate the URP
II. Prepare the research module timetable including deadlines for submissions
III. Finding of supervisors
IV. Allocation of students and supervisors to research groups
V. Organizing student research seminars
VI. Providing feedback from the formative assessments
VII. Approve research protocols submitted for ethical clearance of the Ethics Review Committee-Faculty of Medical Sciences, University of Sri Jayewardenepura (ERC- FMS, USJ)
VIII. Inform the research groups on communications of the ERC- FMS, USJ
IX. Coordinate with the HOD of the department to help students obtain ethical and administrative clearance from the institutions other than FMS
X. Finding of research examiners and obtaining Faculty Board and Senate approval
XI. Collect all research reports and allocate examiners
XII. Prepare the examination schedule
XIII. Send the research reports with guidelines and mark sheets to examiners
XIV. Organize the research viva and collect all marks and feedback forms
XV. Obtain student feedback on research module
XVI. Collate all marks and feedback and hand over to HOD within 2 weeks of the research viva
XVII. Collate the undergraduate research abstract book and upload it to the Department website

Appointment:

An academic member from the department will be nominated and the approval will be obtained by the Faculty Board

Reporting:

Need to report the progress at each department meeting

Annex II

Marking Scheme for Undergraduate Research Report

Component	Maximum marks	Examiner I	Examiner II
Title	05		
Abstract	05		
Background & justification	05		
Objectives	05		
Literature review	05		
Methodology	20		
Results	20		
Discussion	15		
Limitations	05		
Conclusion and recommendations	05		
References	05		
Overall presentation	05		
Total	**100**		

Annex III

Guidelines for preparing tables for the undergraduate research report

a. The table number and the title must precede each table. The title must be concise but descriptive enough to indicate what the table contains.
b. Use footnotes just below the table to fully explain any abbreviation and symbols used in the table. Footnotes may also contain any other information that are useful to describe the contents of the table.
c. Express any percentages out of the row total OR the column total (not both) as appropriate. Indicate the total at final column that precede the column for any statistical tests or the final row as appropriate.
d. Use a single decimal point for any proportions expressed in a table. This must be consistently used even if the value of the decimal point is zero.
e. Keep upper and lower borders for the first row of the table (the row that contains the column headings). Keep the lower border for the last row. Do not keep any other borders for the table.

Use the following format for describing one or more variables in a table.

Table 1. Title of the table

Variable name (e.g. Gender)	N (%)
Variable level 1 (e.g. Female)	59 (59.0)
Variable level 2 (e.g. Male)	41 (41.0)
Total	100 (100.0)

Use the either of the following formats for describing any cross-tabulations between variables including the use of statistical tests to detect associations. For statistical tests, use exact p value if p=0.001 or more. (Ex: if p=0.03 mention as p=0.03 rather than p<0.05, but if p=0.0002 then mention as p<0.001).

Two by two Table- Independent Variable (IV) in columns & Dependent Variable (DV) in rows

Table 3. Title of the table

		IV name (e.g.Gender) N (%)		X^2; df; p
		Variable level 1 (e.g.Female)	Variable level 2 (e.g.Male)	
DV name (e.g. Disease status) N (%)	Variable level 1 (e.g. Diseased)	112 (17.9)	328 (29.4)	27.4; 1; <0.001
	Variable level 2 (e.g. Not diseased)	512 (82.1)	788 (70.6)	
Total		624 (100.0)	1116 (100.0)	

Composite Table- Dependent Variable (DV) in columns & Independent Variable (IV) in rows

Table 2. Title of the table

		DV name (e.g. Disease status) N (%)			X^2; df; p
		Variable level 1 (e.g. Diseased)	Variable level 2 (e.g. Not diseased)	Total	
IV name (e.g. Gender) N (%)	Variable level 1 (e.g. Female)	112 (17.9)	512 (82.1)	624 (100.0)	27.4; 1; <0.001
	Variable level 2 (e.g. Male)	328 (29.4)	788 (70.6)	1116 (100.0)	
IV name (e.g. Age) N (%)	Variable level 1 (e.g. <25 years)	420 (37.5)	700 (62.5)	1120 (100.0)	175; 1; <0.00001
	Variable level 2 (≥25 years)	438 (70.6)	182 (29.4)	620 (100.0)	

Annex IV'

Writing References

A reference lists all the information a reader needs to identify and locate the source that you have cited in your work. It shows the wide variety of sources you have used, that you have used relevant sources of information and helps a reader to trace the sources you have used. References are usually given as a separate chapter at the end of a research report or at the end of a research article.

There are two parts to a reference; the citation and the reference.
Citation is the information used in the report - this should be clearly identified in the text. The citation in the test is linked to a list of references which gives the details of the source.

Referencing is done using two conventional methods.

i. Vancouver method (numeric system)
ii. Harvard system (author - date system)

Vancouver Method

In the Vancouver method **the Citations** are given as numbering on the text itself in brackets or superscript.
The Reference list is organized in numerical order where each number given in text points to the relevant reference.

Harvard system (author-date system)

The citations in the Harvard system are given as the surname/s of the author/s and the year of publication. e.g. **(Gibson, 1980)** or **"as discussed by Gibson (1980)".**
The Reference lists are organized alphabetically by the surname of the first author.

Again the method of writing references depends on the type of article. The method of writing references for different types of literature such as books, journal articles, conference proceedings and web sites, etc. are given in most research methodology books, journals (instructions to authors) and there are a number of useful web sites outlining these methods. Furthermore, the referencing software are available to ease this purpose, among which EndNote, Zotero, Mendeley are a few recommended user friendly software.