

BASIC GUIDELINES FOR MEDICAL RESEARCHES

BASIC GUIDELINES FOR MEDICAL RESEARCHES

First Edition

Author

Omaima Abdulrazzaq Zubair

MBChB M. Sc. Ph.D.

Assistant Professor, Department of Family and Community
Medicine, College of Medicine, University of Mosul, Iraq.

FAIMER Fellow 2020

1445 Hijri

2024 Gregorian

Guidelines for Medical Researches Basic 293

اسم المؤلف Omaima Abdulrazzaq Zubair

رقم الطبعة الاولى – الموصل : دار الكشكول للطباعة والنشر , 2024

اسماء المؤلفين / Abdulrazzaq Zubair Omaima

رقم الايداع / السنة 2024

المكتبة الوطنية / الفهرسة اثناء النشر

رقم الايداع في دار الكتب والوثائق ببغداد (142) لسنة 2024

الرقم القياسي العالمي للكتاب : 4-4-8756-9922-978

رقم الايداع في دار الكتب والوثائق ببغداد (142) لسنة 2024

دار الكشكول للطباعة والنشر

العراق – موصل – المجموعة الثقافية – مقابل باب رئاسة الجامعة



AL KASHKOOL

للطباعة و الاستلساخ

0771 330 9033

يمنع طبع هذا الكتاب أو جزء منه بكل طرق الطبع والتصوير والنقل والترجمة والتسجيل المرئي

والمسموع والحاسوبي وغيرها من الحقوق إلا بإذن خطي من المؤلف

Preface

Medical research is an important aspect of healthcare, as it helps to improve our understanding of diseases and their treatments. By understanding the different types of medical research and study designs, researchers can design and conduct high-quality studies that can help to improve patient outcomes. Medical students face great difficulty in conducting research work as a part of the academic requirements, especially the fourth stage, for the reason of time shortage, and routine work. Consequently, not all students can master the steps of scientific research work, which may create a defect in their background, which leads to a shortcoming in their future work as physicians and researchers. So, bringing guidelines in the research methodology of medicine is critically needed to lead under and postgraduate students in executing such work; which is considered a fundamental item in the curriculum and physician career.

Objectives of This Book

To help medical students to carry out research in a scientific way while saving time, and effort and building out their experience with a minimum of teacher help. This book puts in the hands of the researcher all the information and steps he\she needs, during the process of conducting research, as well as writing the results that he/she reaches scientifically i.e., how to perform research or to write a manuscript. So, the goal is to provide a succinct practical guide, not to prepare a comprehensive reference book, and beginners in the field of health research should look at different sources the list of references listed at the end of the book if they want to be fully aware of the various aspects of the research process.

"Note to the reader: Although the information in this book has been carefully reviewed, neither the author nor the publisher can accept any legal responsibility for any errors or omissions that may be made. Neither the publisher nor the author makes any warrant, expressed or implied, with respect to the material contained here in."

Acknowledgements

Thanks to ALLA for giving me willing and power to complete the writing of this book.

I am grateful to my college (College of Medicine, University of Mosul) with all its staff who guided me with knowledge and support throughout my life whether as a student or a faculty member. Thanks to my family who supported me during the period of my writing, and special thanks to my husband Dr. Mohammad Yousif Mohammad.

Dedication

To the spirit of my mother who encouraged me during her life.

Understanding The Research Process

As a doctor, and at whatever time, if one wants to discover the impact of certain disease on his/her community, realize the effect of a new drug on patients; or wants to evaluate the effects of certain measures on the population at large or even on the small groups in the community, so a research work should take place

Research is the systematic collection, analysis, and interpretation of data to answer a certain question or to solve a problem.

It is a process for acquiring new knowledge in a systematic approach involving diligent planning and interventions for the discovery or interpretation of the new-gained information. (1)

It is worth noting, that the ultimate goal of research work, is to improve control of disease\diseases through both prevention and treatment that will prevent deaths and disability and will enhance the quality of life of those who have developed a serious illness. (2)

Contents

Preface	5
Objectives of This Book	7
Acknowledgements	9
Dedication	11
Understanding The Research Process	13
Chapter 1	21
How to Carry out Research Work	21
1-1Categories of Health Research	21
1.2.1Primary Researches	25
2-2-1Secondary research	25
Chapter 2	51
.2Steps of Research Conducting	51
1-2Research Questions	53
2-2Research Aim & Objectives	55
3-2Research Design	57
4-2Research Title	59
5-2Data Collecting tools	61
2.5.1Primary Data	61
A-Structured Questionnaires	63
B-Unstructured Questionnaires	64

2.5.2Secondary data-collection methods	74
6-2Ethical Considerations	75
7-2Study Participants	78
1-7-2Inclusion Criteria	78
2-7-2Exclusion Criteria	78
2-7-3Assigning Study Participants to Groups	78
8-2Sampling Methods and Techniques	83
1-8-2Types of Sampling Methods	83
2.8.1.1Probability Sampling.....	83
Types of Probability Sampling	83
I-Simple Random Sampling	84
II- Systematic Sampling	84
III -Stratified Random Sampling	85
IV-Cluster Sampling.....	85
V- Multistage Sampling	86
2.8.1.2Non-Probability Sampling	87
Types of non-Probability Sampling	87
I-Convenience Sampling	87
II-Judgmental or Purposive Sampling.....	88
III-Snowball Sampling	89
IV-Quota Sampling	89

2-8-2Sample Size	90
2.9Data Coding	92
10-2Data Analysis	95
1-10-2Types of data analysis	95
2-10-2Risk calculation in research	95
2-10-3P-Value and Significance of The Results	98
4-10-2Bias and Confounding Factors	99
Interact	101
Matching	101
Chapter 3	105
.3Writing A Manuscript	105
Major manuscript parts	105
1-3Summary or Abstract	105
3.2Introduction	107
3.3Methods	107
3.3.1Ethical Consideration in Research	108
3.3.2 Study Participants	108
3.3.3Study Setting	109
3.3.4Study Design	109
3.3.5Study Period	109
3.3.6Data Collection Tool	109

3.3.7Data Analysis	110
3.4Results	110
3.5Discussion	113
3.6Conclusions and Recommendations	116
3.6.1Conclusions Outline	116
3.6.2Recommendations outlines	117
3.7Supplementary (Accessories)	117
3.7.1Conflict of Interest	117
3.7.2Acknowledgments	119
3.7.3Financial Support	120
3.8References	121
.3.8.1Reference style	122
3.8.2Technological Way of Inserting References	132
3.9Appendix	134
3.10Artificial Intelligence in Research	135
Chapter 4	139
.4Publishing Research	139
Chapter 5	145
.5Examples of medical research.....	145
References	181
Appendix	195