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# IADVL Research Compendium



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**Dedicated to**

*All the research participants who have trusted us, taught us  
and succored in carrying forward our inquisitiveness  
in Dermatology....*



# Foreword

*“Nothing has such power to broaden the mind as the ability to investigate systematically and truly all that comes under thy observation in life.”*

—Marcus Aurelius (121-180) Roman Emperor and philosopher

Research is essential for the overall progress of universe and just not mankind. Research has existed from ancient times till today and will continue to exist in future. However earlier research was dogged with controversies and difficulties. The checks and balances were few and often ignored. This is evident in books like “Acres of skin”, Tuskegee trial and World War II horrors etc. As we progressed new norms were implemented. Ethical, moral, methodology, statistical issues were standardized. These changes have benefited both, the subjects and the researchers.



Charles Kettering said “Research means that you don’t know, but are willing to find out” and Neil Armstrong—“Research is creating new knowledge”. To know the unknown and to learn the unlearnt we need to research. Any research needs a hypothesis, methods to prove the hypothesis, statistical values to be used and a well written project report to get funding. Each and every research project needs to fulfill these. Most often we, as researchers have many questions about how to get answers for our research project issues.

This book “IADVL Research Compendium” will provide answers to all our questions. The book has been designed to address issues related to research. It covers, in detail, about preparing a research protocol, sampling technique, statistical method to be used, funding agencies and many more. Each chapter is easy to understand for every researcher. The book will be a valuable addition, just not to dermatologists even to researchers in other fields.

The editorial board comprising of Dr Nilay Kanti Das, Dr Saritha M, Dr Divya Gupta, Dr Amrita Sil and Dr Alpana Mohta along with all authors and the peer reviewers have put in very hard work. The result of their work is there for all of us to read, understand and implement. The book could be realized due to efforts of IADVL Academy Chairperson Dr Deepika Pandhi and Convener Dr Dipankar De.

It is with great confidence and hope that IADVL, as part of Presidential Project 2021, presents to you all “IADVL Research Compendium”. Let this book be an inspiration and motivate all to start or complete your research project.

*“No research without action, no action without research”*

—Kurt Lewin

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# Message from the Honorary Secretary General

Indian Association of Dermatologists, Venereologists and Leprologists (IADVL) is happy to present the first edition of the book “*IADVL Research Compendium*”. This will serve as a ready reckoner for all segments related to research in medical profession. This book is the outcome of one of the presidential projects by Dr Jayadev Betkerur, President, IADVL 2021.

This book “*IADVL Research Compendium*” has been designed to address various issues related to research, as a reference to their day-to-day predicaments faced during planning, conduct or reporting of any research. The chapters have been written by dermatologists with experience, expertise and interest in various aspects of research.

The editors have made sure to include details about preparing a research protocol, sampling technique, statistical method, funding agencies etc. Various examples related to research, exercises, figure, tables and multiple choice questions have been provided in each chapter, so that it is easy to understand for every researcher. The book will be a valuable addition for all residents as well as researchers in dermatology and in other fields, to sharpen their skills and to refresh their knowledge.

I sincerely congratulate the hard work and dedicated efforts of the editorial team lead by Dr Nilay Kanti Das and the team— Dr Saritha M, Dr Divya Gupta, Dr Amrita Sil and Dr Alpana Mohta and all the contributors. I also thank Dr Deepika Pandhi, Dr Dipanker De and all the members of Academy for all their support and help. I wish this initiative all success, and let this book be an inspiration and motivation for all researchers.



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# Message from the Desk of IADVL Academy Chairperson and Convener

Just like well-cooked delicacy, research is a long haul that requires choosing appropriate ingredients, planning, time, execution and presentation. Similar to an acclaimed chef, a researcher has to have aptitude and passion for the job. A majority want their name on print in peer reviewed journals. Acceptance rates in journals and personal communications with colleagues in India suggests that the appearance in print in peer-reviewed indexed journal did not happen for many completed research.

Publication of scientific research is neither a necessity nor a luxury of a select few anymore. Rather it is even a necessity for postgraduate trainees to appear for their final examinations as per National Medical Commission guidelines. It is also mandatory for teachers for selection in the teaching grade and promotion.

To promote research, to initiate the members of Indian Association of Dermatologists, Venereologists and Leprologists into research and to encourage publishing, research methodology workshops and workshops on how to publish have been planned and organized over the last few years by the Special Interest Group—Dermatology Clinical Research (erstwhile Dermatology Clinical Trial) under the aegis of the Academy of the Indian Association of Dermatologists, Venereologists and Leprologists. Research Grants are also provided by the Association for almost a decade now. A void in a title on research methodology was felt and this title '*IADVL Research Compendium*' was envisaged by the President (2021) of Indian Association of Dermatologists, Venereologists and Leprologists—Prof. Jayadev Betkerur as one of his Presidential projects (2021). Prof. Betkerur's vision has taken shape in just above 7 months- the call for applications for editorship was sent out in end of February 2021 and the edited manuscripts were sent to the publisher in late September 2021.

The editorial board with Dr Nilay Kanti Das (Editor-in-Chief), Dr Saritha M (Associate Editor), Dr Alpana Mohta, Dr Amrita Sil and Dr Divya Gupta (Assistant Editors) have done a fantastic job of preparing an all-inclusive table of contents, selecting appropriate authors from applications received from our members, drafting author guidelines for uniformity, participating in authoring chapters, editing and re-editing the drafts and what we see as the outcome is nothing less than a master-piece. The efforts of each and every contributory author are commendable and have helped in the successful culmination of this project.

The chapters start with famous and interesting quotes. This sets the tone of what to expect from the chapter. All the chapters include 'Salient Learning Points' for a quick glance and also a set of MCQs for self-assessment. The textbook also covers self-explanatory and easy to follow figures, important resources, useful and frequently used abbreviations on standard reporting items, research funding agencies, ethics in research in publishing and many more. There is a degree of overlap in the text in some places- it is felt to be necessary to help in grasping the idea in different contexts.

'Proof of the pudding is in the eating.' We are happy that the IADVL Academy had the opportunity to witness the premiere of this fantastic team-work and could contribute at all stages of the preparation of this title. We are sure that this title will be an absolute necessity for both greenhorns and veterans in research and will achieve its goal of promoting good quality research in India.



**Deepika Pandhi**

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# Preface

*“Research is to see what everybody else has seen, and to think what nobody else has thought”*

—Albert Szent-Gyorgyi

Research is the way of advancement of science and it is of paramount importance that it is conducted appropriately. A properly conducted research is challenging for a biomedical researcher given the time invested in patient care. Research involves team-work and everyone in the research team needs to have proper understanding of all the steps of research starting from conceptualization (research question and hypothesis), conduct (drafting the protocol, designing of the study, data collection), analysis (data management and statistical analysis) and final report preparation for submission to biomedical journals (in tune with the guidelines laid in CONSORT, STROBE, PRISMA etc.). National Medical Commission (NMC) publication norms and the above publishing and reporting norms are subject to change. It is necessary for any academician to stay abreast of these changes. Getting funds for research, knowledge of ethics in the conduct of research as well as publication are vital aspects of research.

The present compendium is an aid to every researcher to understand the various facets of research. It is designed to be used as handbook by biomedical researchers as a solution to their day to day predicaments faced during planning, conduct or reporting of research. The book can be archived in the library of all research institutes. The compendium is also planned to help the researcher (faculty members/residents) to learn in-depth the aspects of research highlighted in the “Basic Course in Biomedical Research” developed by ICMR-National Institute of Epidemiology, which has become mandatory in recent times. The idea of penning down the ‘Research Compendium’ had been conceptualized and endorsed by Dr Jayadev Betkerur, President IADVL, as his presidential project. The Indian Association of Dermatologists, Venereologists and Leprologists (IADVL), taking cognizance of this need, has commissioned this book with the aim of it developing a one-stop ready reckoner for all things related to research. The chapters have been designed in such a way so as to fulfil this purpose and they deal comprehensively with all the steps from conceptualisation of research to publishing a manuscript. The chapters have been written by dermatologists with robust research experience along with budding and interested researchers.

This book is intended to cater not only to the residents and faculty of Dermatology but also faculty and residents across all medical disciplines. Throughout the book, examples related to Dermatology have been provided while discussing various important aspects of research. To aid retention of new learning from the book; exercises and multiple-choice questions have been provided at the end of each chapter. Since research methodology can occasionally seem to be tedious reading, every attempt has been made to make the chapters lucid with bright and colourful figures, text boxes and tables. All the chapters commence with Chapter highlights and wraps up with MCQs and pertinent problem scenarios. For all clinician-scientists involved in academic and sponsored drug trials, a comprehensive cover of all the regulatory requirements and approvals required has been provided. We have also covered the sometimes-neglected area of qualitative research in a comprehensive manner.

We would like to strongly encourage all involved in academic and sponsored research to fully utilize the contents of this book to improve their understanding and performance related to research and publication. With publications being the mandated norm for career advancement in all NMC affiliated institutes in India; “Publish or perish” is the new academic mantra. This book offers all relevant knowledge related to various types of research that can result in valuable publications, thus improving the performance of residents, faculty guides, their respective departments and institute. This book envisages the advancement and enhancement in the research milieu of the speciality of Dermatology and the country.

*“The measure of greatness in a scientific idea is the extent to which it stimulates thought and opens up new lines of research.”*

—Paul AM Dirac

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# Acknowledgments

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IADVL Research Compendium owes its gratitude to its enthusiastic patron, Dr Jayadev Betkerur, President IADVL, for commencing and contemplating to bridge the gap between clinics and research. Dr Betkerur had taken up this endeavor as his presidential project, supported and counseled the editorial team in different phases starting from its very conception to conclusion.

Honorary Secretary General IADVL, Dr Feroze K and entire IADVL Executive Committee lend their whole-hearted support in planning and execution of this project. The editorial team expresses sincere thanks to them for their support.

Dr Deepika Pandhi, Chairperson, IADVL Academy and Dr Dipankar De, Convenor, IADVL Academy had always trusted us and provided much needed inputs and motivation at various stages of the project. Their constant overview and vigilance kept the project streamlined. The project would not have seen the light of the day without the guidance and operational support received from IADVL Academy.

We acknowledge the expertise and unending effort of our team of authors. The compilation would not have been complete without their energy, enthusiasm, adherence to the deadlines in drafting and revising the manuscripts. They had also served as internal reviewers of other chapters of the book and their feedback was of enormous value in shaping the final contents.

We are indebted to our panel of external reviewers from medical disciplines across and beyond Dermatology for their constructive criticism to improve the quality, standard and excellence of the chapters.

We are thankful to CBS Publishers and Distributors Pvt. Ltd and the entire publishing team for their technical expertise for materialising our ideas into print. Their tireless efforts shaped IADVL Research Compendium to its present form.

This mammoth task would not have been contrived without the constant encouragement and support of the family members of each of our editorial team member. In spite of the COVID-19 pandemic bringing life to standstill, the dream team cooperated and communicated with each other, working at a break-neck speed and prowess to bring out the essence of this compendium.





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