

‘Research methodology- Fundamentals of Developing Research proposals’ on 10th Aug 2017 at RUHS

Rajasthan University of Health Sciences conducted one day workshop on **‘Research methodology- fundamentals of developing Research proposals’** on 10th Aug 2017 for which grant in aid was given by ICMR, New Delhi. Eminent speakers like Dr Dennis Xavier, Professor of Clinical Pharmacology and Head of Clinical Research, St John’s Medical College, Bangalore delivered his talk on **Challenges for conducting clinical research and setting up a sustainable program** . Dr Rajeev Gupta Chairman, ARDU, RUHS, Jaipur delivered his talk on **Research Question** and Dr Atul Juneja Scientist at NIMS (ICMR) delivered his talk on **Data Analysis**

The first session of workshop was delivered by **Dr Dennis Xavier** on **Challenges for conducting clinical trials, setting up a sustainable program** . In his talk Dr Xavier emphasised that Medical training whether UG training or PG thesis has no focus on research. As faculty, research is not first choice as well as there is funding problem. Loss of interest is just because there is no mentorship, no protected time and no atmosphere. Present researches face problems like animal regulations, drug trials, and academic international collaboration .Opportunities for researches are on the topic like CD, NCD and epidemiological health system. The mandatory thing should be training in clinical researches and MCI should mandate academics.

For sustainability, we should create research culture and start the program at UG level by making it a part of curriculum. At PG level quality should be improved and student topic should be promoted. For faculty, protected time, infrastructure, promotions and incentives for research should be given.

Research should be done for improvement of human kind and it should be collaborated with industries. Funding and academic collaboration should be must for quality research, Institution / University should support for infrastructure, finance and laboratories.

Second talk on Formulation of a research question was delivered by Dr Rajeev Gupta.He emphasised Research question should start with good science including communalism, universalism, disinterestedness and original skepticism. Original research question should be clear, have right study design, act ethically, minimize bias and agree to publish with negative results.

Research question should have four factors- purpose, theory, method and sampling strategy. Good research question is only when it is feasible, interesting, novel, ethical and relevant.

Steps for good research question are- state the problem, literature survey, formulate hypothesis and identify objectives. Do the research if you are genuinely interested. Research is relevant if nothing is known about the topic, knowledge is scattered and previous results are contradictory. A good review describes source of information, clarify type and strength of evidence and declared provenance. Research question should be a scientific answer to a relevant question.

Third talk was on Issues in **Data analysis** by **Dr Atul Juneja** and spoke about Component of researches are protocol development, data management, study implementation, study monitoring, data analysis and report writing. Study design should be such that it give most definitive answers about the research topics.

Involvement of statistician is important to decide sample size, sampling methodology, randomization handling selection bias. Data management includes data capture, data transcription, data transfer, data entry , data cleaning , storage of hard copies, storage of electronic data , data coding and data backup and recovery.

Data freezing involves errors emerging through programmed approach, raising queries and data freezing through DSMB.

There are three types of studies –experimental, case and observational studies. There are two types of variables- qualitative and quantitative. Statistical methods include descriptive and inferential statistics. For considering sample size, we should determine power of test, level of significance, underlying event rate.

There are two hypotheses- null and alternative hypotheses. The procedure begins with the assumption that null hypotheses is true. If evidence are in support of alternative hypotheses then we will reject null hypotheses.

There are two type of test- parametric and nonparametric tests. Parametric statistics is used in a normally distributed population, equal variance and observation is independent. Nonparametric test are used when parametric tests are violated and data is on an ordinal scale.

In nutshell statistics help in quantification of scientific facts , substantiating the finding in clinical research , comparability and standardization of results .

In post Lunch session participants developed research proposals with inputs from Dr Vishwa Mohan Katoch , Former Director General, ICMR, New Delhi, Dr Dennis Xavier (St. John's Medical College, Bangalore), Dr Ashok Bhardwaj, Dean Faculty of Medicine- RUHS, Jaipur , Dr Bharti Malhotra, Dean Faculty of Paramedical Sciences, Jaipur and Dr Rajeev Gupta, Resource faculty.45 participants attended the workshop.

RMC accredited the CME and accorded 2 credit hours for the participants.