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KARNATAKA RADIOLOGY EDUCATION PROGRAM

CLINICAL RESEARCH – BRIDGING IMAGING & INNOVATION

SESSION – 3 – RESEARCH QUESTION



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RESEARCH QUESTION – FIRST STEP IN RESEARCH

- ✓ MOST IMPORTANT & OFTEN NEGLECTED PORTION IN MEDICAL RESEARCH
- ✓ FUNDAMENTAL TO CLINICAL RESEARCH
- ✓ FIRST STEP TOWARDS THE CLINICAL RESEARCH
- ✓ RESEARCH QUESTION GENERATES FROM THE HYPOTHESIS
- ✓ A GOOD RESEARCHERS SPEND SIGNIFICANT TIME IN FRAMING A RESEARCH QUESTION
- ✓ RESEARCH QUESTION EXCITES REVIEWERS, EDITORS & PUBLISHERS TO ACCEPT FOR PUBLICATION
- ✓ WITHOUT A GOOD RESEARCH QUESTION, EFFORTS IN CARRYING OUT THESIS/ RESEARCH BECOME REDUNDANT



RESEARCH QUESTION – SOURCES TO FIND

- ✓ HOW DO YOU GET RESEARCH IDEAS?
 - ✓ BRAIN STORMING
 - ✓ EDITORIALS/ EXPERT OPINIONS
 - ✓ MENTORS/ PEERS
 - ✓ EXPERIENCE / ROUTINE PRACTICE CHALLENGES
 - ✓ RESEARCH GAPS
 - ✓ THEORY BOOKS/ REFERENCES/ JOURNALS
 - ✓ PRAGMATIC REASONS – RESEARCH GRANTS
- ✓ ALWAYS BUILD A TEAM OF RESEARCHERS
- ✓ LEARN-DO-ANALYSE-CORRECT-TEACH-LEARN-REPEAT



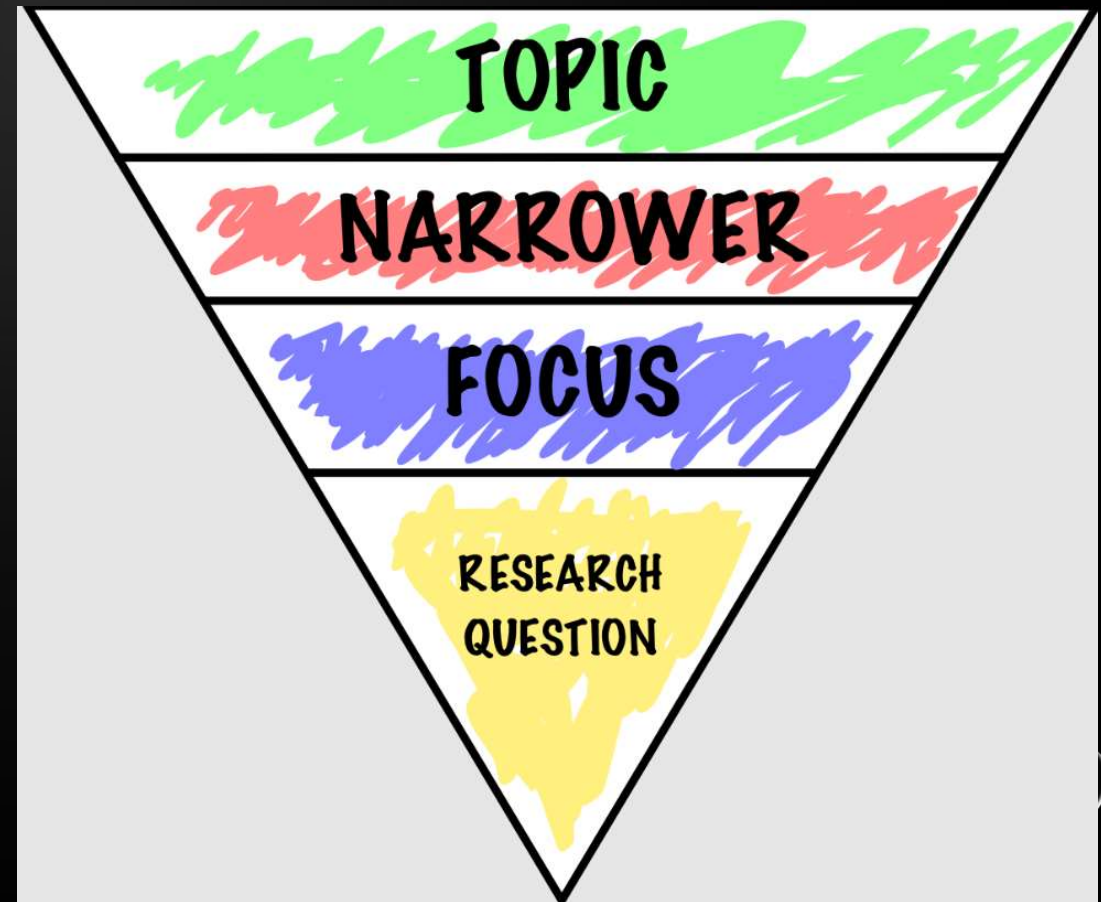
GOOD RESEARCH QUESTION

✓ CHARACTERISTICS OF GOOD RESEARCH QUESTION

- ✓ CLARITY
- ✓ RELEVANCE
- ✓ CONTRIBUTION TO THE EXISTING BODY OF KNOWLEDGE

✓ KEY INGREDIENTS FOR DEFINING A GOOD RESEARCH QUESTION

- ✓ FOCUSED/ SPECIFICITY OF THE IDEA
- ✓ FEASIBILITY OF THE RESEARCH
- ✓ SIGNIFICANCE / IMPACT OF THE RESEARCH



RESEARCH QUESTION –FINER CRITERIA

✓ FOLLOWING CRITERIA TO BE EMPLOYED WHILE FORMULATING A RESEARCH QUESTION

✓ F – FEASIBILITY – IS THE CURRENT RESEARCH FEASIBLE IN OUR SET-UP?

✓ I – INTEREST – IDEA SHOULD BE INTERESTING TO THE CLINICIANS/ PATIENTS/ ENTREPRENEURS

✓ N – NOVEL – AUTHENTIC/ ORIGINAL AND UNIQUE IDEA

✓ E – ETHICAL – RESEARCH SHOULD NOT HAVE ETHICAL CONCERNS

✓ R – RELEVANCE – IDEA SHOULD BE RELEVANT TO CURRENT OR FUTURE PRACTICE

RESEARCHABLE QUESTION

- ✓ RESEARCHABLE QUESTIONS THAT ARE TOO BROAD OR TOO NARROW CAN MAKE YOUR RESEARCH DIFFICULT, IF NOT IMPOSSIBLE.
- ✓ EXAMPLES
 - ✓ **TOO BROAD** – HOW DO YOU DIAGNOSE HEPATOCELLULAR CARCINOMA?
 - ✓ THIS TOPIC IS SO BROAD THAT YOU'D HAVE DIFFICULTY WADING THROUGH ALL OF THE RESULTS
 - ✓ **TOO NARROW** – AT XYZ SET-UP HOW TO DIAGNOSE HEPATOCELLULAR CARCINOMA ON PATIENTS UNDERGOING DYNAMIC TRIPLE PHASE CONTRAST ABDOMEN STUDY ON 3TESLA MRI?
 - ✓ THIS QUESTION IS SO SPECIFIC THAT THERE PROBABLY HASN'T BEEN ANYTHING PUBLISHED ON THAT SPECIFIC LOCATION.
 - ✓ **JUST RIGHT** – HOW TO DIAGNOSE HEPATOCELLULAR CARCINOMA ON TRIPLE PHASE CT/ MRI ABDOMEN STUDY?