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Research Glossary of Terms & Resource Links

1. **Hypothesis:** A hypothesis is a tentative idea or explanation of existing phenomena which is then supported or refuted through study and experimentation.
2. **PICO(t):** A PICO(t) question focuses clinical inquiry and guides a literature search strategy. The mnemonic represents Patient/Population/Problem, Intervention/Innovation, Comparison/Current, and Outcome. Include (t) for Time only when it is relevant to the clinical question, such as mortality rate (O) 6-months (t) following an intervention(I).
3. **Research question**: A research question guides scientific inquiry, analysis, and dissemination. An effective research question is focused, feasible, specific, relevant, and original. Starting with a clearly defined question, instead of an answer or solution, helps with collection and exploration of insightful information.
4. **Data collection** is defined as the procedure of collecting, measuring and analyzing accurate insights for research using standard validated techniques. A researcher can evaluate their hypothesis on the basis of collected data. In most cases, data collection is the primary and most important step for research, irrespective of the field of research. https://www.questionpro.com/blog/data-collection/
5. **Institutional Review Board (IRB).** Under the Food and Drug Administration (FDA) guidelines, an IRB is a group that has been formally chosen to review and monitor research involving human subjects. In agreement with FDA guidelines, an IRB has the authority to approve, require modifications to, or disapprove research. The purpose of IRB review is to assure, both in advance and by intermittent review, that correct steps are taken to protect the rights and welfare of humans participating as subjects in research.
6. **Methods: Sample/population Definitions:**
   - **Population:** The entire group that you want to draw conclusions about. In research, a population doesn't always refer to people or patients.
   - **Sample:** The specific group that you will collect data from. The size of the sample is always less than the total size of the population.
   - **Probability Sampling Methods:** Every member of the population has a chance of being selected. Primarily used in quantitative research.
   - **Four Main Probability Methods**:
     o **Simple Random Sampling:** A probability sampling method in which every individual in the population being sampled has an equal likelihood of being included.
     o **Stratified Random Sampling:** A probability sampling method in which one wants to ensure that specific characteristics are proportionally represented in the sample. You split your population into subgroups and then randomly select from each of these subgroups. This method is used to ensure that different segments in a population are equally represented.

- o **Cluster Sampling:** A probability sampling method in which one is unable to sample from the entire population. One divides the sample into clusters that approximately represent and should have similar characteristics to the whole population, and then choose your sample from a random selection of these clusters.
  - o **Systematic Sampling:** A probability sampling method in which every member of the population is listed with a number, but instead of randomly generating numbers, individuals are chosen at regular intervals. i.e., in which every n^{th} person is selected from a list or from other ordering.
- **Purposive (non-random / non-probability samples):** Involves non-random selection based on convenience or other criteria, allowing you to easily collect data. Primarily used in qualitative research.
- **Four Main Purposive Methods:**

  - **Convenience Sampling:** A nonprobability sampling in which people are sampled simply because they are "convenient" sources of data for researchers. Participants are selected based on availability and willingness to take part.

  - **Quota Sampling:** a non-probability sampling method in which researchers create a sample involving individuals that represents a population. Researchers choose these individuals according to specific traits or qualities.

  - **Judgement (or Purposive/selective/subjective) Sampling:** A non-probability sampling method in which researchers rely on their own judgment when choosing members of the population to participate in their surveys.

  - **Snowball Sampling:** a non-probability sampling method in which research participants are asked to assist researchers in identifying other potential subjects.

7. **Data analysis** is the scientific process of organizing, transforming, and modeling raw data to extract useful information.
8. **Outcomes measures** is an organized method to evaluate the extent to which the intervention has accomplished the intended result. An outcome the effectiveness of the intervention and its consequence.
9. **Implications for practice:** Research implications are the conclusions you draw from your results and include an explanation how the findings may be important for policy, practice, or theory. They can incorporate specific suggestions regarding further research on the topic. Nursing implications are the nursing-related consequences of something (a disease, a medication, a procedure). ie. not the medical side effects, but the things which may occur which are up to the nurse to resolve.