

Rationale and Types of Research in Obstetrics and Gynaecology

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Why Research in Obstetrics and Gynaecology?

- To provide evidence for action – termed evidence-based decision making
- To assist countries to become self-sufficient in meeting the obstetric and gynecological needs of their populations
- For program evaluation to determine effectiveness and relative effectiveness

Evidence-Based Medicine (EBM)

- EBM is the systematic, scientific, and explicit use of current best research evidence in making decisions about the care of individual patients to ensure high quality and cost-effective delivery of reproductive services to the community.
- With EBM, providers must be able to access the evidence and have knowledge of research to decipher the methods used for improving RH interventions and services.

Research Capacity Building in RH

- Building research capacity is an integral part of improving sexual and reproductive health.
- Research is expanding our insight into numerous RH issues.
- For example, research is examining barriers to both the uptake and continuing use of existing contraceptives and the potential use and efficacy of new contraceptive products.
- Research also identifies factors that impede the provision or use of services designed to prevent, diagnose, and manage sexually transmitted infections, etc.

Types of Research in RH

- Quantitative Research
- Qualitative Research
- Triangulation of Research findings (meaning Qualitative + Quantitative) – using qualitative research to define the meaning of quantitative research

Quantitative Research (QR)

- The main goal of Quantitative Research (QR) is to determine the relationship between one thing (an independent variable) and another (a dependent or outcome variable) in a population, and when indicated, establish a cause and effect relationship.
- We express the relationship between variable using effect statistics, such as correlations, relative frequencies, or differences between means.

Quantitative Research

- Quantitative research designs are either descriptive (subjects usually measured once) or experimental (subjects measured before and after an intervention).
- A descriptive study establishes only associations between variables. An experiment establishes causality and effectiveness of interventions.

Qualitative Research

- **Qualitative research methods** were developed in the social sciences to enable researchers to study social and cultural phenomena.
- Qualitative research seeks to provide answers on why things happen without seeking the details of how they happen as in quantitative studies.
- Qualitative findings can encourage insight and empathy by raising awareness of "what it feels like to be in a given situation" in matters relating to sexual and reproductive health.
- Using this method, researchers can gain insights as to how patients experience sensitive issues such as abortion and HIV/AIDS.

Qualitative Research

- Qualitative data sources include Focus Groups Discussion, In-depth Interviews, Observations and participant observation (fieldwork).
- Analysis of qualitative data is inductive in that variables, relationships and theories are constructed after data are reflected upon rather than testing to see if the data support a pre-established proposition or hypothesis.
- Overall, qualitative research methods are employed to establish purpose, context and meaning.

Purpose of Qualitative Research

- The motivation for doing qualitative research, is to help researchers understand people and the social and cultural contexts within which they live.
- Kaplan and Maxwell⁹ suggest that the goal of understanding a phenomenon from the point of view of the participants and its particular social and institutional context is largely lost when textual data are quantified.

Types of Quantitative Research

- **Descriptive or Observational (also called Formative Research)** - no attempt is made to change behavior or conditions; things are measured as they are.
- **Experimental or Quasi-Experimental** - requires measurements to be made, intervention instituted followed by repeated measurements to see what happened

Descriptive vs. Experimental Studies

Descriptive Studies

- Large sample sizes
- A representative sample
- Reduces bias
- No need to compare groups – but this can be done during analysis with sub-group analysis
- Robust statistics often needed – including multivariate analysis

Experimental Studies

- Smaller sample sizes
- A representative sample also reduces bias
- Comparison of experimental and non-experimental groups (control) often required
- Robust comparative analysis also needed

Types of Descriptive Studies

- Case report
- Case series
- Cross-sectional
- Cohort or prospective or longitudinal
- Retrospective studies
- Case-control Studies

Types of Experimental or repeated-measures Studies

- Without a control group
 - time series
 - crossover
- With a control group

Examples of Descriptive Quantitative Research in RH

- Assessment of current state of facilities for maternal and child health, reproductive health and for youth friendly services
- Assessment of rates of maternal morbidity and mortality
- Assessment of family planning uptake and reasons for poor uptake of family planning services

Examples of Experimental Studies in RH

- The testing of a new randomised programme of antenatal care in a multicentre trial in 2001 by the World Health Organization (WHO).
- The current testing of a package of interventions to improve the quality of care in 4 hospitals compared to 4 hospitals in Nigeria – funded by the WHO
- Testing a series of interventions to improve women's access to PHC for antenatal and delivery care in rural areas of Edo State

Qualitative Studies – Basis and Rationale

- There is not a single reality,
- Reality is based upon perceptions that are different for each person and change over time, and
- What we know has meaning only within a given situation or context

Value of Qualitative Research in RH

- Qualitative methods are receiving more emphasis in SRH research.
- SRH is embedded in cultural and social practices and therefore have implications for the way we approach research
- Application of qualitative research evidence involves gaining insights or empathy, program planning, guidance and implementation.
- Qualitative research methods vary in their degree of visibility and usefulness.

Steps in Qualitative Research - Summary

- Identification of the cultural issue to be studied
- Identifying the significant variables within the culture
- Literature review
- Gaining entrance into the community
- Cultural immersion
- Acquiring informants
- Gathering data
- Analysis of data
- Description of the culture, and
- Theory development.

Examples of Qualitative studies in RH

- A study investigating why adolescent females do not use emergency contraceptive pills (ECP), despite their widespread availability.
- A study to investigate why rural women do not use existing PHCs for antenatal and delivery care
- A study to investigate why women use traditional rather than orthodox forms of delivery care
- A study to investigate why men and women do not go for HIV testing.

Benefits of Qualitative Research

- Qualitative research methodology offers the investigators deeper insights into a specific problem/question in RH
- Findings from qualitative studies have the potential to contribute to future quantitative research efforts, for example, by providing insights into the decision-making process regarding reproductive health among these study populations.
- The themes provide a foundation for developing and refining interventions for experimental research.

Limitations of Qualitative Research

- Researchers may not be sufficiently familiar with the cultural norms of the people being studied or their language.
- Studies sometimes use measures that are assumed, inaccurately, to be equivalent across cultures.
- The interpretation of findings may be inadequate due to the limited knowledge of the culture being studied.
- Qualitative research focuses mainly on observing and documenting interactions with people of how their daily life conditions and patterns are influencing reproductive health practices.

Other Research Methods Applicable to Reproductive Health

- Phenomenology
- Grounded Theory
- Action Research

Phenomenology

- Phenomenological studies examine individuals' specific life experiences and individual perceptions.
- The purpose of this research method is to describe experiences as they are lived in to capture the "lived experience" of study participants.
- The phenomenologist believes that people's lived experiences determine their subjective reality. For example, the experience of living with chronic illnesses such as HIV, infertility, or cancer ascribes significance to the victim's understanding of their disease.

Components of Phenomenology

- Lived space (spatial)
- Lived body (corporeal)
- Lived human relationships (relational); and lived time (temporal).
- When these aspects are taken into consideration it becomes apparent that people see different realities in different situations, in the company of different people, and at different times.

Methods of Phenomenology

- Identify the phenomenon that the investigator seeks to explore.
- The researcher will develop the research question. The broad question that phenomenologists want answered is "What is the meaning of one's lived experience?"
- Two factors need to be considered in developing the research question: what are the necessary constituents of this feeling or experience and what does the existence of this feeling or experience indicate concerning the nature of the human being?
- Next, the researcher identifies the sources of the phenomenon being studied and seeks individuals who are willing to describe their experience(s) with the phenomenon in question.
- The participants must understand and be willing to express their inner feelings and describe any physiological or psychological experiences that are associated with the feelings.

Methods of Phenomenology – Cont'd

- The main source of data in phenomenological research is in-depth discussion, with both the researcher and informant participating fully. Purposeful sampling, or choosing individuals based on their knowledge of a particular event, is preferred.
- Data are collected through a variety of means: observation, interactive interviews, videotape and written descriptions by subjects.
- The outcome of analysis is a theoretical statement responding or providing answers to the research question. The statement is validated by examples of the data often with opinions or direct quotes from the subjects.
- Reports of phenomenological studies provide a rich description of the meaning of a lived experience using direct quotes from participants as examples..

Examples of Phenomenology in RH

- Infertile women interviewed after miscarriage have found that the women universally look to another pregnancy as the solution to their grief.
- Also, women experiencing spontaneous abortion suffer a lot of grief.
- Since phenomenology research is typically initiated with an open frame of mind and relatively little background information, this approach is ideal for developing new theories and exploring phenomena in RH where such information is limited.

Grounded Theory

- The term grounded theory means that the theory developed from the research is "grounded" or has its roots in the data from which it was derived.
- As its name implies, grounded theory literally aims to develop theory that is generated from or grounded in the data obtained by the researcher.
- Within RH, grounded theory has been used most often in studying areas where there has been little previous research and in gaining new insight into previously researched areas. Hence, it becomes an inductive method of gaining new knowledge.

Methods in Grounded Theory Research

- In grounded theory research, the investigator will be observing, collecting, organizing, analyzing and contrasting new data with concepts in previously identified data, and forming theory from the data simultaneously.
- An important methodological technique in grounded theory research is the constant comparative process in which every piece of data is compared with every other piece. Data may be collected by interview, observation, records, or a combination of these.
- Typically, grounded theory research projects in RH tend to have a sample of 30 - 50 subjects.
- Data collection usually results in large amounts of hand-written notes, typed interview transcripts, or video/audio taped conversations that contain multiple pieces of data to be sorted and analyzed.

Examples of Grounded Theory Research in RH

- Grounded theory is an appropriate method for RH researchers interested in understanding the social processes underlying human experiences and behavior. For example, in a study exploring a gender-based approach to SRH issues, Varga employed a grounded theory approach to examine links between gender ideology or gender roles and the social impact of adolescent pregnancy and childbearing in the lives of rural and urban adolescents in KwaZulu/Natal, South Africa. Factors potentially related to adolescent childbearing and its potential impact on the lives of young people were explored using semi-structured interviews.
- The results indicated that gender ideals are grounded in traits that reinforce poor sexual negotiation dynamics and behavioral double standards that place adolescents at risk for early pregnancy.
- The emerging theory proposed that “compared with its effect on boys, parenthood has a disproportionate (and highly negative) impact on girls that is directly linked to gender-based inequities.”

Action Research

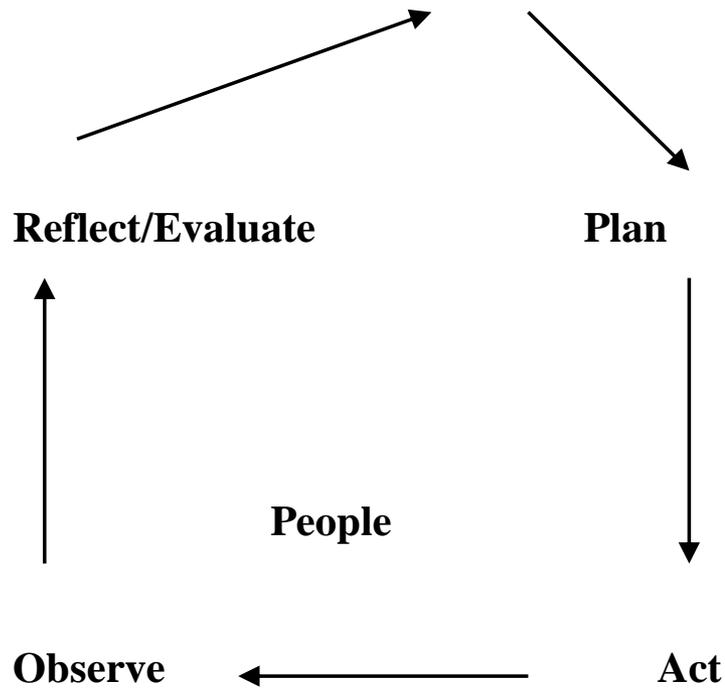
- Action Research is neither quantitative nor qualitative research - It is more a tool for change than true research.
- Action research is known by other names, including participatory research, collaborative inquiry, emancipatory research, action learning, and contextual action research.
- Action research is "learning by doing" - a group of people identifies a problem, does something to resolve it, sees how successful their efforts were, and, if not satisfied, tries again.

Methods in Action-Research

- Action research approach includes doing some baseline measures using questionnaires, observation or other research methods as an assessment of the problem.
- Objectives are then set and decisions made about how to bring about a change.
- While change plans are put into action, progress is monitored, changing the plans as necessary or appropriate.
- Once the change has been implemented, a final assessment is made and conclusions drawn, accompanied by writing a report on the project for those involved or for dissemination to others.

Circle of Action Research

Diagnose (identify the problem)



Characteristics of Action Research

- Has an educational function.
- Deals with individuals as members of social groups.
- Is problem focused, context specific and future orientated.
- Involves a change intervention.
- Aims at improvement and involvement.
- Involves a cyclic process in which research, action, and evaluation are interlinked.
- Is found in a research relationship where those involved are participants in the change process.
- There may be an overall review of the study, recommendations and dissemination to a wider audience.

Examples of Action-research in RH

- Action research is particularly relevant to RH in developing countries by helping researchers and health professionals to design approaches suitable to sexual and reproductive health throughout the life cycle, and thus help minimize the health morbidity of unwanted pregnancies and unsafe abortions, maternal mortality and morbidity, sexually transmitted and reproductive tract infections, harmful cultural practices, gender imbalance, and sexual violence.
- Examples of action research centers include the Women's Health and Action Research Centre WHARC in Benin City, Nigeria and the Youth and Adolescent Reproductive Health Project in Yaounde, Cameroon.

Comparison of Qualitative and Quantitative Research

Quantitative Research

- Is objective and its results are generalizable.
- The data are usually gathered using more structured research instruments.
- The results provide less detail on behaviour, attitudes and motivation.
- The results are based on samples that are representative of the population.
- The analysis of the results is objective.
- The research findings are reported in a numerical way using statistics.
- The research can usually be replicated or repeated, given its high reliability.

Qualitative Research

- Is subjective, based on inductive reasoning and its results are not generalizable.
- Uses words rather than numbers and flows from concreteness to abstractness.
- Compared to QR is relatively new with emerging techniques and strategies.
- Data collection occurs concurrently with data analysis.
- The researcher influences the individuals being studied. In turn, the researcher is influenced by those being studied.
- The research findings are reported in a literary descriptive fashion rather than numerical or statistical language.

Choosing Research Topics in RH

- Must be applied research, not just research that sits on the bench
- Research must be innovative (novel) aimed at solving contemporary problems.
- Research topic should be as specific as possible, and do-able within a specific time-frame
- Research methods should be internal consistent with the research objective, and be clearly explicit

Research in RH....

- Either quantitative or qualitative method should be used or a mix of both
- Methods used should be justified and well described in the methods section
- Analysis must be concrete and must depend on the method(s) used

Some References..

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THANK YOU