



Ministry of Health & Population
Egypt

Pharmaceutical Sector Reform Program HSRP

Pharmaceutical Training Program in collaboration with Europe Aid

Identification Number: EuroAid/121454/D/SV/EG

Program Specifications

Program 6: Scientific Research Procedures in the Drug Sector

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1. General Objectives

Within the context of the Egyptian national goal of reform of the pharmaceutical care in the broader health care delivery system, the general objective of this program is to provide a sound foundation for researcher in the drug sector. It provides pharmacists with essential knowledge and skills enabling them to develop purposeful scientific research procedures in their specialism field, via professional research problem formulation, and study designing, conducting, presentation, and interpretation that could lead to the articulation of testable research hypotheses. It also informs pharmacists about recent academic development in the scientific research through exploring a variety of state-of-the-art topics typically required in the drug sector, and pays particular attention to the appropriateness of various methodological approaches and the endowed role of ethical conduct and good practice.

2. Intended Learning Outcomes (ILOs) of the program

2.2. Knowledge/Understanding

By the end of this program the trainee should be able to demonstrate understanding of:

- 2.1.1. Scientific research approaches with their endowed principles
- 2.1.2. Processes of planning and management the research procedures
- 2.1.3. Research problem and hypotheses formulation
- 2.1.4. Different stages, techniques and sources of literature search
- 2.1.5. Appropriate research approaches, methodological strategies and designs used in medical and pharmaceutical fields
- 2.1.6. Different types of data and their appropriate collection
- 2.1.7. Qualitative versus quantitative research
- 2.1.8. Concepts of data sampling and randomization
- 2.1.9. Fundamental concepts of the inferential and descriptive statistical methods commonly used in the biological field
- 2.1.10. Data organization, processing, and analysis as well as results interpretation and presentation
- 2.1.11. Basic structure of scientific research articles and regulations relevant to scientific research and executive report writing

2.1.12. Citation and journal impact factors with their implications in scientific and academic field

2.1.13. Issues and regulations pertinent to the ethical conduct of scientific research, and principles of good clinical research practice

2.2. Intellectual Skills

By the end of this program the trainee should be able to:

2.2.1. Construct appropriate plan to get relevant published literature

2.2.2. Apply appropriate methods for designing, conducting, presenting, and interpreting scientific and clinical research.

2.2.3. Appropriate selection of scientific research journals

2.2.4. Discuss implications for the various methods of sampling and collecting different types of data

2.2.5. Select appropriate statistical methods for interpretation of research data

2.3. Professional and Practical Skills

By the end of this program the trainee should be able to:

2.3.1. Select appropriate research procedures including the design and data sampling, collection and analysis

2.3.2. Professionally conduct scientific and clinical research studies.

2.3.3. Pursue extended scientific research training experiences.

2.3.4. Interpret and discuss clinical and scientific research findings.

2.3.5. Conceptualize and write a research article addressing specific relevant questions related to the drug sector and having an impact on the delivery of pharmaceutical care.

2.3.6. Become knowledgeable about all the stages of the research procedure pertinent to the medical field with more emphasis on the drug sector.

2.3.7. Disseminate research findings and reports.

2.4. Transferable Skills

By the end of this program, the trainee should acquire:

2.4.1. Statistical and numeracy skills.

2.4.2. Written and verbal communication skills and ability.

2.4.3. Presentation skills.

3. Program Contents

- 3.1. Restructuring Strategies of the Pharmaceutical Sector as Part of the Health Sector Reform.
 - 3.1.1. Functional Restructuring and its Rationale.
- 3.2. Introduction
- 3.3. Research and Scientific Methods
- 3.4. Scientific Research and Statistics
- 3.5. Scientific Research Principles
- 3.6. Scientific Research Categories
- 3.7. Scientific Research Procedures: Planning and Management
- 3.8. Formulation of Research Problem and objectives
- 3.9. Searching Literature
- 3.10. Statement of Research Hypotheses
- 3.11. Research Methodology
- 3.12. Research Framing, Sampling and Randomization
- 3.13. Use of Controls
- 3.14. Data Collection: Quantitative versus Qualitative
- 3.15. Hypothesis Testing
- 3.16. Data Presentation
- 3.17. Analysis of Data and Interpretation of Results
- 3.18. Scientific Report Writing
- 3.19. Executive Report Writing
- 3.20. Ethical Aspects of Health Research
- 3.21. Principles of Good Clinical Research Practice

4. Training and Learning Methods

Interactive training delivered by qualified expert trainers including, but not limited to:

- 4.1. Mini-lecture,
- 4.2. Brainstorming,
- 4.3. Case study,
- 4.4. Open discussion,
- 4.5. Homework exercises including preparation of presentation material.

- 4.6. Presentations by participants.
- 4.7. Small group work
- 4.8. External readings.
- 4.9. Detailed trainees handouts.

5. Assessment/Indicators

- 5.1. Class and group participation (25%).
- 5.2. Presentation and open discussion exercises (30 %).
- 5.3. On time delivered homework (20 %).
- 5.4. Pre vs. post tests (25 %).

6. Target Groups

- 6.1. Researchers in NODCAR.

7. Number of Participants

- 7.1. Twenty Participants.

8. Duration

- 8.1. 6 Days (30 Hours).

9. References.