

EDITORIAL

TOWARDS IMPROVING QUALITY OF FOOD AND MEDICINAL PRODUCTS: THE ROLE OF A PHARMACIST IN THE 21ST CENTURY

Access to food, nutrition and good health are fundamental in life. The provision of adequate food and medicines are inalienable rights of all human beings. Governments worldwide strive to provide the best health care services to their citizenry. According to the Kenyan constitution 2010, every person has the right to the highest attainable standard of health, adequate food of acceptable quality, and access to clean and safe water in sufficient quantities. All these provisions are possible if food and medicinal products are of good quality, which must always be safeguarded and sustained. Most processed foods and medicines have written standards from manufacturing, distribution and storage to preserve their integrity, quality, safety and efficacy. However, most developing countries experience considerable challenges of substandard food and medicinal products in their markets. Low-quality products are a source of risk and may impact negatively on product quality and patient safety. The danger arises from incorrect amounts of ingredients or contamination with harmful substances. Contaminants are of varying classes, ranging from microorganisms to (in)organic impurities. Factors that contribute to poor quality include personnel involved in manufacturing, buildings, facilities, equipment, raw materials, and manufacturing processes. Adequate quality assurance procedures during manufacture, storage, distribution, and use are essential to preserve the quality of products.

Tests for microbial contamination of foods and pharmaceutical products are one of the key quality parameters. Millions of people worldwide suffer from infectious diseases arising from consuming contaminated food, water or pharmaceutical products. The occurrence of microbial contamination of food and medicines is due to true pathogens such as *Clostridium tetani*, *Escherichia coli*, *Staphylococcus aureus*, *Salmonella typhi* or opportunistic microbes including *Pseudomonas aeruginosa*. Microbial infections are not only the result of the physical presence of microorganisms, but also their toxins that become harmful even in minute quantities. Some of these toxin-related illnesses include acute gastroenteritis, abdominal discomfort, and diarrhea. Symptoms vary from mild gastric distress to death, depending on individual susceptibility to the toxin, amount ingested, and general health of the victim. Microbial pollution is a serious food safety issue because it can lead to a wide range of foodborne diseases. A high number of foodborne illnesses and outbreaks have occurred in which contamination of fresh produce and animal products occurs from polluted sources with pathogenic microbes. These calamities emanate from contamination of the products at various stages of processing that are not detected due to inadequate quality checks.

A study carried out in Tanzania on pharmaceutical products in a hospital showed that they were heavily contaminated with *Klebsiella*, *Bacillus*, and *Candida* species (Mugoyela & Mwambete, 2010). Two articles in this issue address important food quality aspects. Mwambete and Mpanda isolated both bacteria and fungi from sugar cane extracts among vendors in Dar es Salaam city. The bacteria encountered were *Escherichia coli*, *Staphylococcus aureus* and *Pseudomonas aeruginosa* while the fungi were *Candida albicans* and *Aspergillus flavus*. Ongarora and Karwimbo demonstrated that milk from automated dispensing machines in Nairobi had microbial contamination. These studies show that quality assurance of foods and pharmaceuticals remains an elusive target.

The pharmacist is looked upon to assist society by ensuring that the market has quality products. In Kenya, the amendment of Cap 244 granted the Pharmacy and Poisons Board (PPB) a broader mandate in regulating health products and technologies. Besides the traditional role of controlling the quality of pharmaceutical products, the regulatory body shall be responsible for ensuring that herbal medicines, medical devices, cosmetics, functional foods and nutraceuticals are of good quality. The quality standards of herbal medications are not established in Kenya, and therefore PBB is charged with establishing standards for these products. It is incumbent on the Universities offering pharmacy degree programs to equip trainees with the necessary competencies to meet the expectations of society.

There is a trend among the East African Community states to harmonize the regulations in various sectors. Among the areas earmarked for change is the regulation of foods and medicines. For this purpose, some countries like Tanzania have embraced and developed a single regulatory authority for these consumables akin to the United States Food and Drug Administration. In light of these trends, the pharmacist has to assess the environment, exploit the opportunities, and find his or her new position as the driver of the quality of these products. The profession must rise to the occasion, through curriculum review to include quality aspects of therapeutic foods, cosmetics and medical devices. These areas have not been adequately emphasized in the past, but play a critical role in the market.

Which way for the pharmacist? A profession is known and respected for its contribution to society. It thrives by seizing the available opportunities, being innovative and creative, and plugging the possible gaps. Pharmacists must, therefore, exploit their potential and develop or innovate robust procedures for ensuring the quality of herbal and conventional medicines, nutraceuticals, cosmetics and medical devices. Through the relevant social and government organs, the pharmacist should be at the front line, supporting the need for quality in manufacturing industries, hospitals, and community practice.

Dr. Peter N. Karimi (PhD)

Clinical pharmacist